



Internal Use Only

<http://biz.lgservice.com>

Air Conditioner

SVC MANUAL(General)

CAUTION

Before Servicing the unit, read the safety precautions in General SVC manual.
Only for authorized service personnel.

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Part 1 General Information

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1. Safety Precautions

To prevent injury to the user or other people and property damage, the following instructions must be followed.

- Incorrect operation due to ignoring instruction will cause harm or damage. The seriousness is classified by the following indications.




WARNING

This symbol indicates the possibility of death or serious injury.








CAUTION





This symbol indicates the possibility of injury or damage to properties only.







- Meanings of symbols used in this manual are as shown below.

	Be sure not to do.
	Be sure to follow the instruction.
	Dangerous Voltage





1.1 Cautions in Repair






 WARNING	
Be sure to disconnect the power cable plug from the plug socket before disassembling the equipment for a repair. Internal components and circuit boards are at main potential when the equipment is connected to the power cables. This voltage is extremely dangerous and may cause death or severe injury if come in contact with it.	
Do not touch the discharging refrigerant gas during the repair work. The discharging refrigerant gas. The refrigerant gas can cause frostbite.	
Release the refrigerant gas completely at a well-ventilated place first. Otherwise, when the pipe is disconnected, refrigerant gas or refrigerating machine oil discharges and it Can cause injury.	
When the refrigerant gas leaks during work, execute ventilation. If the refrigerant gas touches to a fire, poisonous gas generates. A case of leakage of the refrigerant and the closed room full with gas is dangerous because a shortage of oxygen occurs. Be sure to execute ventilation.	
When removing the front panel or cabinet, execute short-circuit and discharge between high voltage capacitor terminals. If discharge is not executed, an electric shock is caused by high voltage resulted in a death or injury.	
Do not turn the air-conditioner ON or OFF by plugging or unplugging the power plug. There is risk of fire or electrical shock.	

Do not use a defective or underrated circuit breaker. Use the correctly rated breaker and fuse. Otherwise there is a risk of fire or electric shock.	
Install the panel and the cover of control box securely. Otherwise there is risk of fire or electric shock due to dust, water etc.	
Indoor/outdoor wiring connections must be secured tightly and the cable should be routed properly so that there is no force pulling the cable from the connection terminals. Improper or loose connections can cause heat generation or fire.	
Do not touch, operate, or repair the product with wet hands. Holding the plug by hand when taking out. Otherwise there is risk of electric shock or fire.	

⚠ CAUTION	
Do not turn on the breaker under condition that front panel and cabinet are removed.	
Be sure to earth the air conditioner with an earthing conductor connected to the earthing terminal.	
Conduct repair works after checking that the refrigerating cycle section has cooled down sufficiently. Otherwise, working on the unit, the hot refrigerating cycle section can cause burns.	
Do not tilt the unit when removing panels. Otherwise, the water inside the unit can spill and wet floor.	
Do not use the welder in a well-ventilated place. Using the welder in an enclosed room can cause oxygen deficiency.	
Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.	




1.2 Inspections after Repair

⚠ WARNING	
Check to see if the power cable plug is not dirty or loose. If the plug is dust or loose it can cause an electrical shock or fire.	
Do not use a joined power cable or extension cable, or share the same power outlet with other electrical appliances. otherwise, it can cause an electrical shock, excessive heat generation or fire.	
Do not insert hands or other objects through the air inlet or outlet while the product is operating. There are sharp and moving parts that could cause personal injury.	
Do not block the inlet or outlet of air flow. It may cause product failure	

⚠ CAUTION	
Check to see if the parts are mounted correctly and wires are connected. Improper installation and connections can cause an electric shock or an injury.	
Check the installation platform or frame has corroded. Corroded installation platform or frame can cause the unit to fall, resulting in injury.	
Be sure to check the earth wire is correctly connected.	
After the work has finished, be sure to do an insulation test to check the resistance is 2[Mohm] or more between the charge section and the non-charge metal section (Earth position). If the resistance value is low, a disaster such as a leak or electric shock is caused at user's side.	
Check the drainage of the indoor unit after the repair. If drainage is faulty the water to enter the room and wet floor.	

2. Model line up


2.1 Indoor units

Category	Type	Chassis	Model Name Capacity, kW						
			3.5	5.0	6.0	7.0	10.0	12.5	13.4
Ceiling cassette	4way		TP	ATNH12GPLE1 [UT12H NP1]	ATNH18GPLE1 [UT18H NP1]				
			TN		ATNH21GNLE1 [UT21H NN1]	ATNH24GNLE1 [UT24H NN1]			
			TM				ATNH36GMLE1 [UT36H NM1]	ATNH42GMLE1 [UT42H NM1]	ATNH48GMLE1 [UT48H NM1]
Ceiling concealed duct			BG		ABNH18GGLA1 [UB18H NG1]	ABNH21GGLA1 [UB21H NG1]	ABNH24GGLA1 [UB24H NG1]		
			BR				ABNH36GRLA1 [UB36H NR1]	ABNH42GRLA1 [UB42H NR1]	ABNH48GRLA1 [UB48H NR1]
Ceiling suspended			VJ	UVNH12GJLA1 [UV12H NJ1]	UVNH18GJLA1 [UV18H NJ1]				
			VK		UVNH21GKLA1 [UV21H NK1]	UVNH24GKLA1 [UV24H NK1]			
			VL				UVNH36GLLA1 [UV36H NL1]	UVNH42GLLA1 [UV42H NL1]	UVNH48GLLA1 [UV48H NL1]


2.2 Outdoor units

DC Inverter High Efficiency models (1Ø)

DC Inverter super		AUUW126DH1 [UU12WH UE1]	AUUW186DH1 [UU18WH UE1]	AUUW216DH1 [UU21WH U41]	AUUW246DH1 [UU24WH U41]
Total capacity index of connectable indoor units	kW	3.5	5.0	6.0	7.0
Power supply		1Ø, 220-240V, 50Hz			
Chassis					

DC Inverter super		AUUW366DH1 [UU36WH U31]	AUUW426DH1 [UU42WH U31]	AUUW486DH1 [UU48WH U31]
Total capacity index of connectable indoor units	kW	10.0	12.5	13.4
Power supply		1Ø, 220-240V, 50Hz		
Chassis				

DC Inverter High Efficiency models (3Ø)

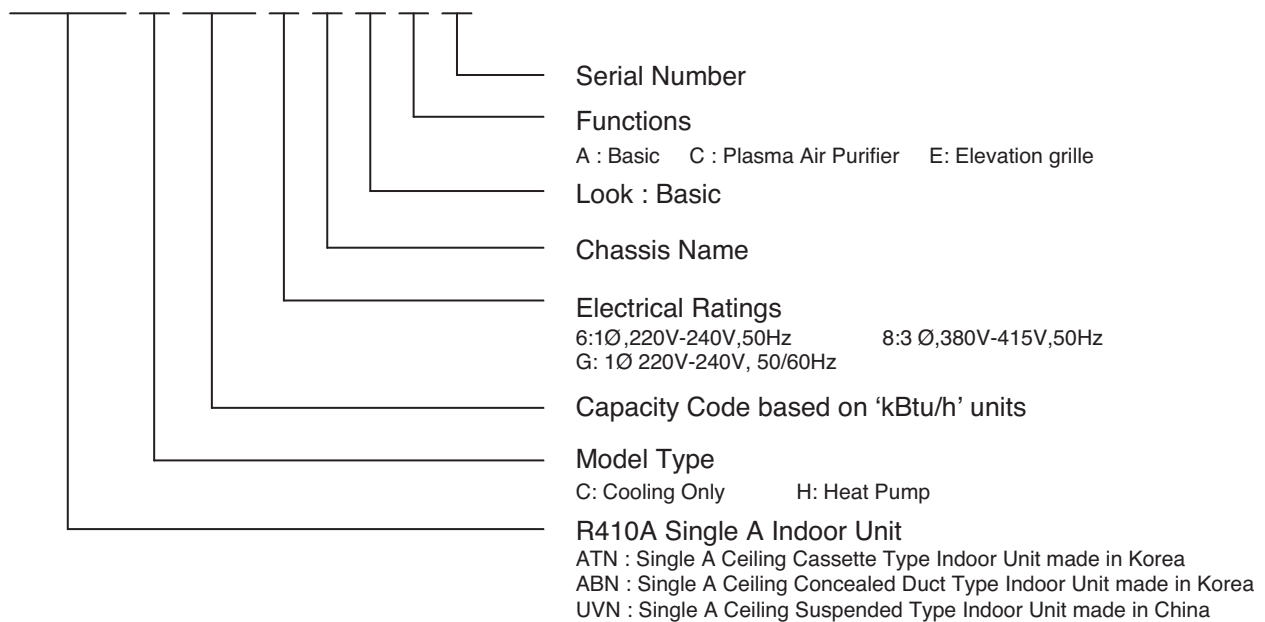
DC Inverter super		AUUW368DH1 [UU37WH U31]	AUUW428DH1 [UU43WH U31]	AUUW488DH1 [UU49WH U31]
Total capacity index of connectable indoor units	kW	10.0	12.5	13.4
Power supply		3Ø, 380-415V, 50Hz		
Chassis				

3. Nomenclature

• Global Model Name

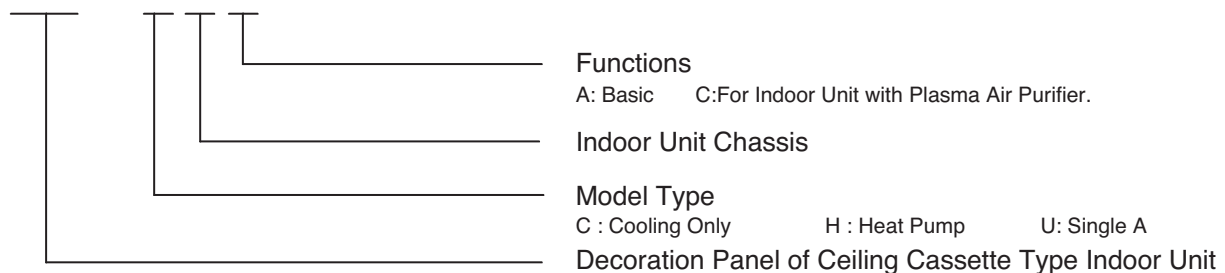
3.1 Indoor units

A T N H 24 G N L E 1



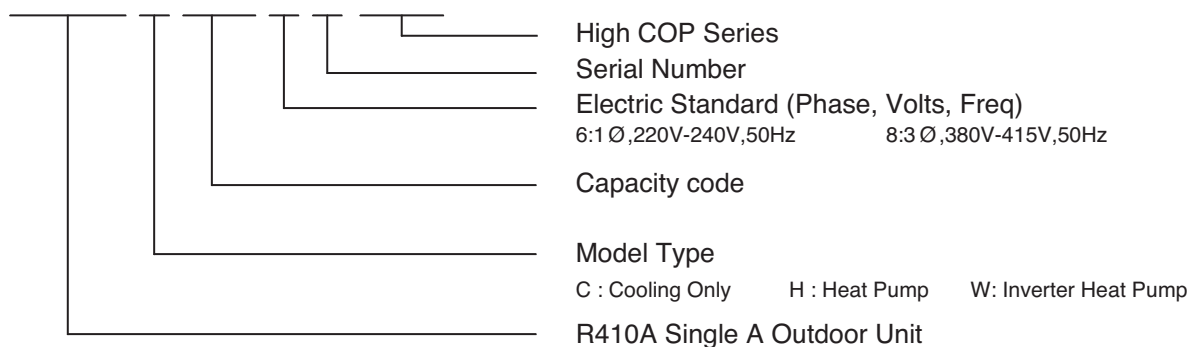
3.2 Decoration panel(For ceiling cassette models)

P T - U M C



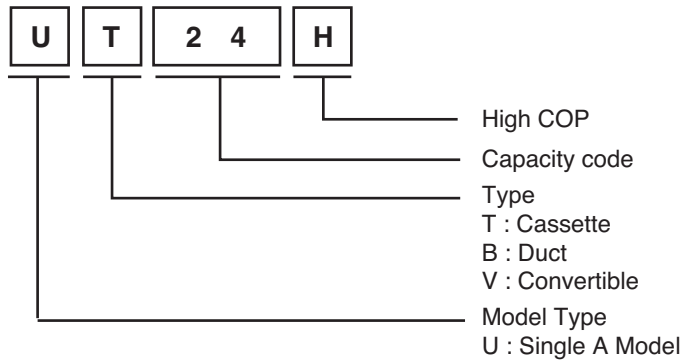
3.3 Outdoor units

A U U W 24 6 D H 1

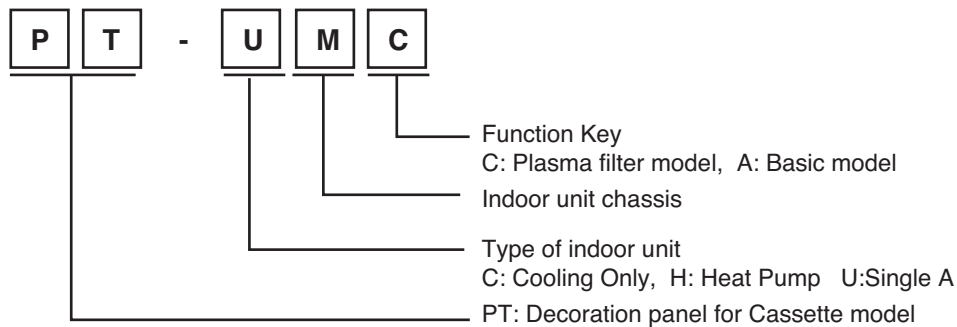


• Europe Model Name

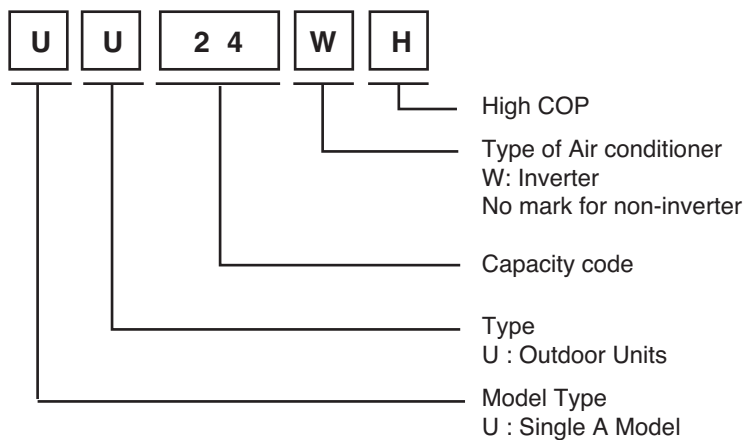
3.4 Indoor units



Decoration panel



3.5 Outdoor units



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1. List of Functions & Controls

Category	Function	Ceiling Cassette 4-way	Ceiling Concealed Duct	Ceiling suspended
Air flow	Air supply outlet	4	1	1
	Airflow direction control(left & right)	-	X	Manual
	Airflow direction control(up & down)	auto	X	Auto
	Auto swing(left & right)	-	X	-
	Auto swing(up & down)	O	X	O
	Airflow steps(fan/cool/heat)	4/5/4	3/3/3	4/5/4
	Chaos swing	X	X	X
	Chaos wind(auto wind)	O	X	X
	Jet cool(Power wind)	O	X	O
Air purifying	Swirl wind	O	X	X
	Deodorizing filter	-	X	X
	Plasma air purifier	PTPKM0	X	X
Installation	Prefilter(washable / anti-fungus)	O	O	O
	Drain pump	O	O	X
	E.S.P. control	O	O	X
	Electric heater(operation)	-	X	X
Reliability	High ceiling operation	O	X	X
	Hot start	O	O	O
	Self diagnosis	O	O	O
	Soft dry operation	O	O	O
Convenience	Auto changeover	O	O	O
	Auto cleaning	X	X	X
	Auto operation(artificial intelligence)	X	X	X
	Auto Elevation Grille	PTEGM0	X	-
	Auto restart operation	O	O	O
	Child lock	O	O	O
	Forced operation	O	X	O
	Group control	O	O	O
	Sleep mode	O	X	X
	Timer(on/off)	O	O	O
	Timer(weekly)	O	O	O
	Two thermistor control	O	O	O
Individual control	Standard wired remote controller	X	X	X
	Wide Character wired remote controller Picto wired remote controller"	PQRCVSL0/PQRCVSL0QW	PQRCVSL0/PQRCVSL0QW	PQRCVSL0/PQRCVSL0QW
	Deluxe wired remote controller	PQRCUDS0	X	X
	Simple wired remote controller	PQRCUCS0C	X	X
	Wired remote controller(for hotel use)	PQRCFCS0C	X	X
	Wireless remote controller(simple)	X	X	X
	Wireless LCD remote control	PQWRHDF0(H/P)	PQWRHDF0(H/P)	PQWRHDF0(H/P)
CAC network function	General central controller (Non LGAP)	X	X	X
	Dry contact	PQDSB	PQDSB	PQDSB
	Network Solution(LGAP)	O	O	O
	PDI(power distribution indicator)	X	X	X
	PI 485	PMNFP14A0	PMNFP14A0	PMNFP14A0
Special function kit	Zone control	-	ABZCA	X
	CTIE	-	X	X
	Electro thermostat	-	X	X
Others	Thermistor	-	PQRSTA0	X

Note:

* : Some of functions are slightly different depending upon models, refer individual function table on "PART 2. indoor units

** : For ceiling concealed duct models, auto-run function of dry contact is not applicable. [If RF remote control use, auto-run function of dry contact is applicable.(Refer to accessory PDB)]

• O : Applied, • X : Not applied, • - : No relation,

• Option: Model name & price are different according to options, and assembled in factory with main unit.

• Accessory: Installed at field, ordered and purchased separately by the corresponding model name, supplied with separate package.

• Dry contact & Zone control & Auto changeover is not available which is connected with synchro.

• When using synchro operation

- Do not use wireless remote controller

- Use only one wired remote controller in the indoor units.

- Use central and function controller "PQCSB101S0" & "PQCSC101S0" only

Category	Function		Remark
Reliability	Defrost / Deicing		O
	High Pressure Switch		-
	Low Pressure Switch		-
	Phase protection		-
	Restart Delay (3-minutes)		O
	Self Diagnosis		O
	Soft start		O
	Test Function		-
Convenience	Auto changeover		O
	Night Mode		O
	Auto Restart Operation		O
CAC Network Function	Central control(LGAP)	Pair system	PQCSW320A0E
		Simultaneous operation system	PQCSB101S0/PQCSC101S0
	Dry contact		X
	PDI(Power Distribution Indicator)		X
	PI485		PMNFP14A0 PMNFP14A1
Special Function Kit	Low Ambient Kit		O (program logic)
Others	Thermistor		-

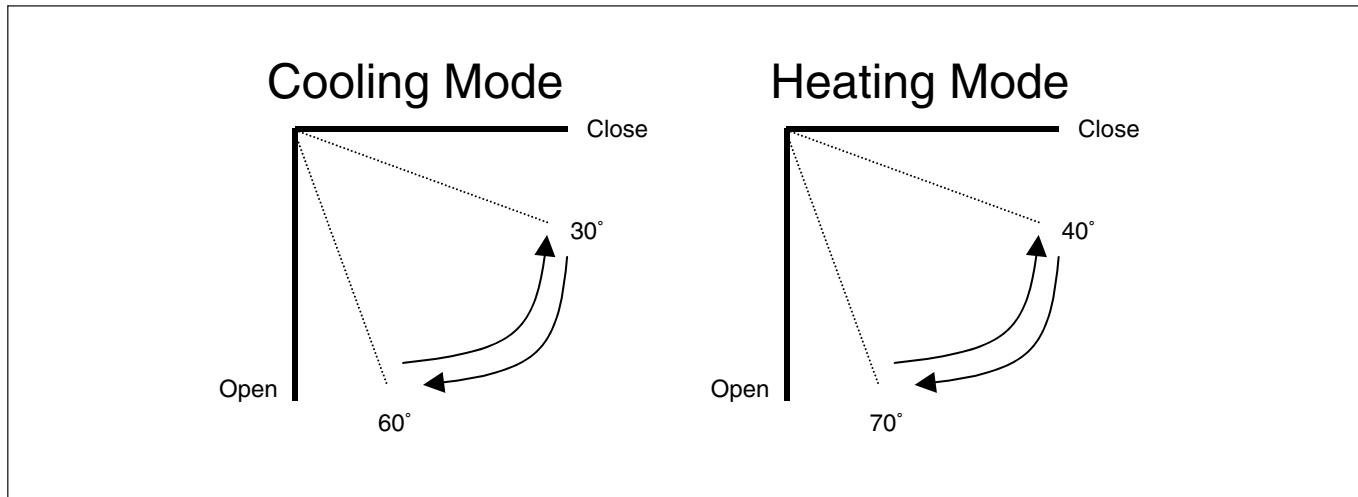
Notes: The Exploded View part has the particular Function table for each model.

2. Air flow

* Some Models are different with swing width and swing pattern.

2.1 Auto swing (up & down)

- By the auto swing key input, the upper/lower vane automatically operates with the auto swing or it is fixed to the desired direction.



2.2 Air flow step

- Air volume is controlled, "SL", "LO", "MED", "HI", "SH", "AUTO" by remote controller in cooling mode.
- Air volume is controlled, "SL", "LO", "MED", "HI", "AUTO" by remote controller in heating mode.

Step	Discription
SL	Very low
LO	Low
MED	Med
HI	High
SH	Super high
Auto	Chaos wind

2.3 Chaos wind (auto wind)

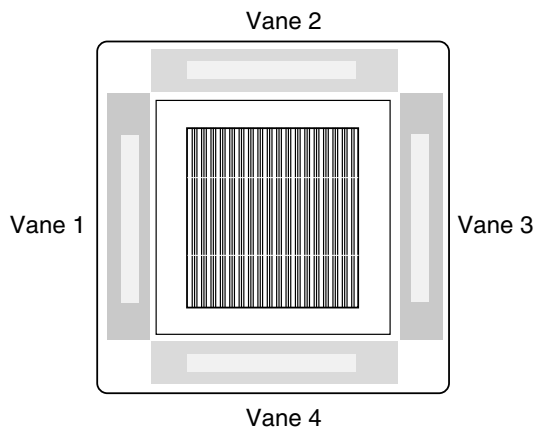
- When "Auto" step selected and then operated, the high, medium, or low speed of the airflow mode is operated for 2~15 sec. randomly by the Chaos Simulation

2.4 Jet Cool Mode Operation

- While in heating mode or Fuzzy operation, the Jet Cool key cannot be input.
When it is input while in the other mode operation (cooling, dehumidification, ventilation), the Jet Cool mode is operated.
- In the Jet Cool mode, the indoor fan is operated at super-high speed for 30 min. at cooling mode operation.
- In the Jet Cool mode operation, the room temperature is controlled to the setting temperature, 18°C.
- When the sleep timer mode is input while in the Jet Cool mode operation, the Jet Cool mode has the priority.
- When the Jet Cool key is input, the upper/lower vanes are reset to those of the initial cooling mode and then operated in order that the air outflow could reach further.

2.5 Swirl wind Swing

- It is the function for comfort cooling/heating operation.
- The diagonal two louvers are opened the more larger than the other louvers. After one minute, it is opposite.



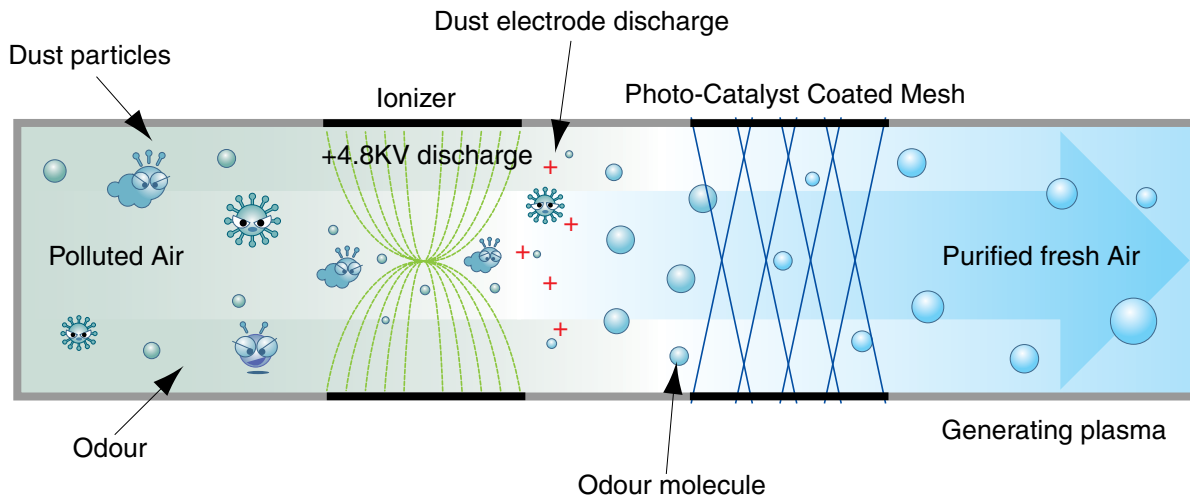
Swirl Swing

Vane 1	Close	Open	Close	Open	Close
Vane 2	Open	Close	Open	Close	Open
Vane 3	Close	Open	Close	Open	Close
Vane 4	Open	Close	Open	Close	Open
	Time				

3. Air purifying

3.1 PLASMA Air Purifying System

The PLASMA Air Purifying System not only removes microscopic contaminants and dust, but also removes house mites, pollen, and pet fur to help prevent allergic diseases like asthma. This filter that can be used over and over again by simply washing with water.



4. Installation Functions

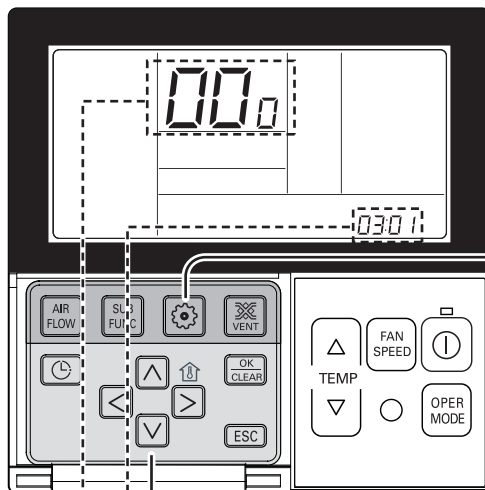
4.1 E.S.P. (External Static Pressure) Setting

What is an E.S.P function?

This is the function that decides the strength of the wind for each wind level and because this function is to make the installation easier, please do not use this function when using the remote controller.


CAUTION

If you set ESP incorrectly, the air conditioner may malfunction.
This setting must be carried out by a certificated-technician.
This function is used for only Duct product.




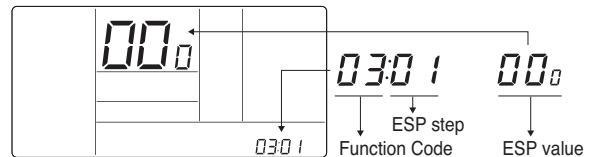
Function code,
ESP code



ESP value

- 1 If pressing  button long for 3 seconds, it enters into remote controller setter setup mode.
- If pressing once shortly, it enters into user setup mode. Please press more than 3 seconds for sure.

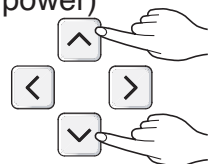



- 2 If entering into ESP setup mode by using  button, it indicates as the picture below.



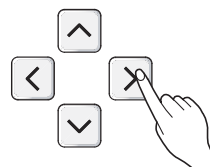
- 3 Select ESP fan step by pressing   button. (01: very low, 02: low, 03: medium, 04: high, 05: power)



0301

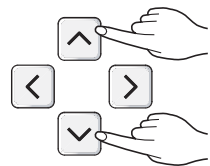


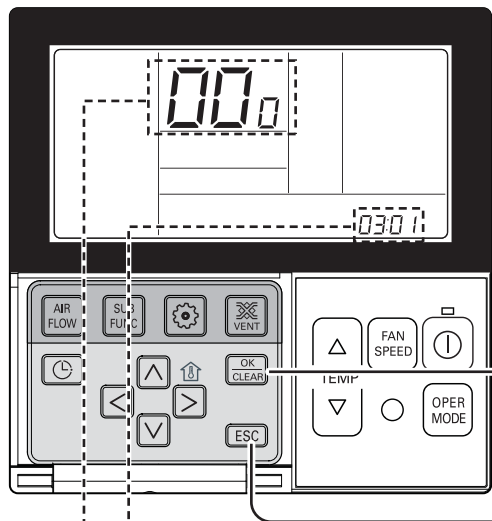
- 4 Move to ESP value setting by pressing  button.
(It is 000 when delivering from the warehouse.)

0301 00.0



- 5 Press   button to setup ESP value.
(It is possible to setup ESP value from 1 to 255, and 1 is the smallest and 255 is the biggest.)





6 Select ESP fan step again by using button and setup ESP value, as No. 4 and 5, that corresponds each wind flow

7 Press button to save.

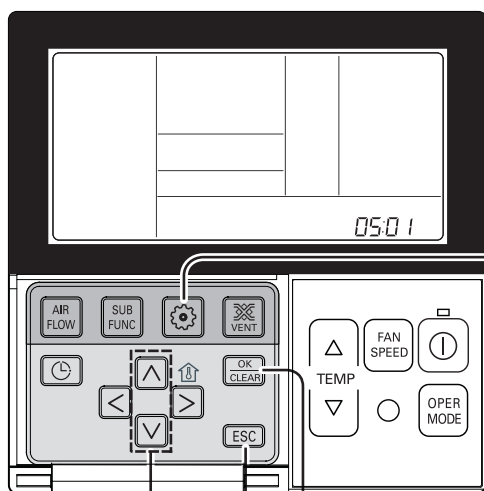



8 Press button to exit.
 * After setup, it automatically gets out of setup mode if there is no button input for 25 seconds.
 * When exiting without pressing set button, the manipulated value is not reflected.

- Please be careful not to change the ESP value for each fan step.
- It does not work to setup ESP value for very low/power step for some products.
- ESP value is available for specific range belongs to the product.


4.2 High Ceiling operation

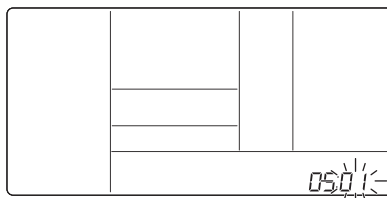
This function is to adjust FAN Airflow rate according to ceilingheight (only cassette model)





- 1** If pressing  button long for 3 seconds, it enters into remote controller setter setup mode.
- If pressing once shortly, it enters into user setup mode. Please press more than 3 seconds for sure.



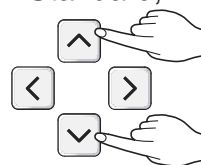
- 2** If moving to ceiling height selection menu by pressing  button, it indicates as picture below.



- 3** Select ceiling height value by pressing   button. (01:Low, 02:Standard, 03:High,

05:01


Function Code Thermistor setting



- 4** Press  button to save.

05:01



- 5** Pressing  button will exit settings mode.
* After setup, it automatically gets out of setup mode if there is no button input for 25 seconds.
* When exiting without pressing set button, the manipulated value is not reflected.

<Ceiling Height Selection Table>

Ceiling Height Level	Description
01 Low	Decrease the indoor airflow rate 1 step from standard level
02 Standard	Set the indoor airflow rate as standard level
03 High	Increase indoor airflow rate 1 step from standard level
04 Very high	Increase indoor airflow rate 2 steps from standard level

- Ceiling height setting is available only for some products.
- Ceiling height of 'Very high' function may not exist depending on the indoor unit.
- Refer to the product manual for more details.

5. Reliability

5.1 Hot start

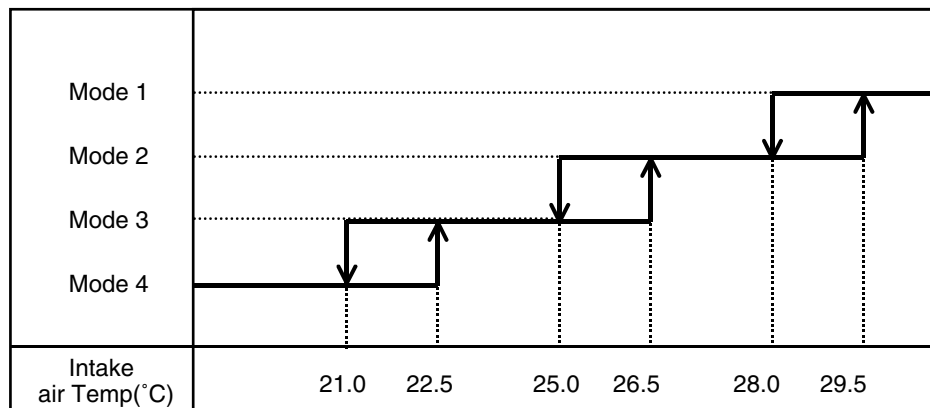
- When heating is started, the indoor fan is stopped or very slow to prevent the cold air carry out
- When the temp. of heat exchanger reach 30°C(model by model), indoor fan is started.

5.2 Self-diagnosis Function

- The air conditioner installed can self-diagnosed its error status and then transmits the result to the central control. Therefore, a rapid countermeasure against failure of the air conditioner allows easy management and increases the usage life of air conditioner.
- Refer to trouble shooting guide.

5.3 Soft dry operation

- When the dehumidification operation input by the remote control is received, the intake air temperature is detected and operation mode is automatically set according to the intake air temperature.



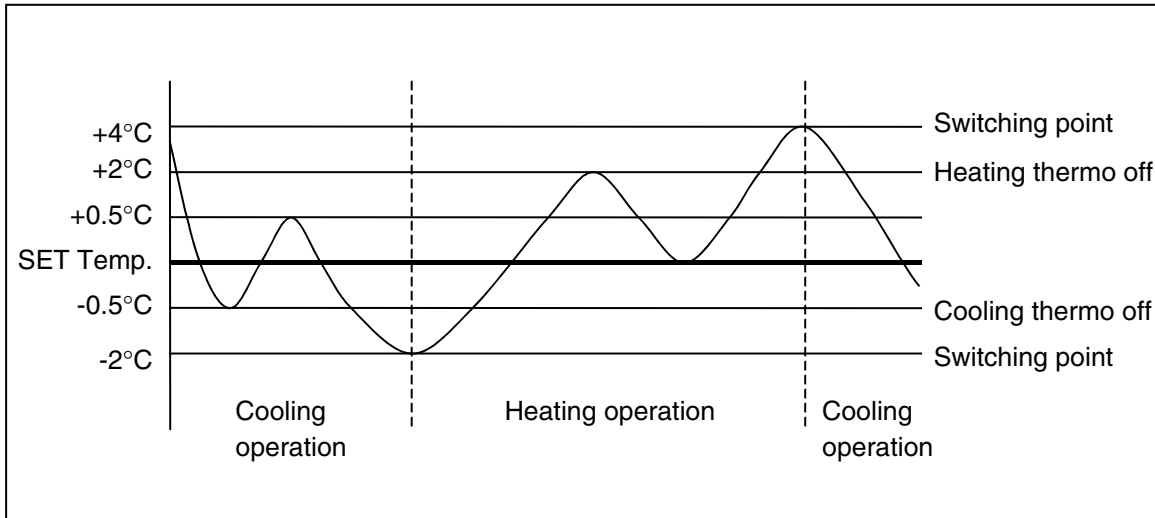
Mode	Compressor On/Off	Fan Speed
Mode 1	On	Setting fan Speed
Mode 2	10min On, 6min Off (Repetition)	Low
Mode 3	6min On, 10min Off (Repetition)	
Mode 4	Off	

- In rainy season or high humidity climate, it is possible to operate simultaneously dehumidifier and cooling mode to remove humidity effectively.

6. Convenience Functions & Controls

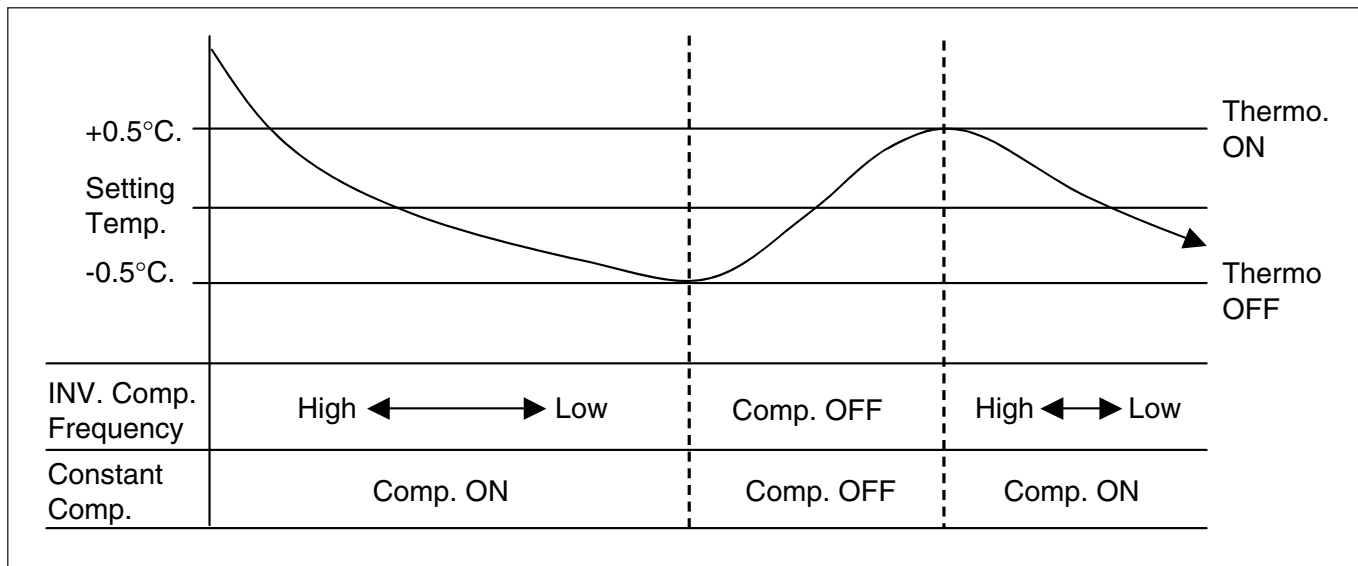
6.1 Auto changeover operation

- The air conditioner changes the operation mode automatically to keep indoor temperature.
- When room temperature vary over $\pm 2^{\circ}\text{C}$ with respect to setting temperature, air conditioner keeps the room temperature in $\pm 2^{\circ}\text{C}$ with respect to setting temperature by auto change mode.



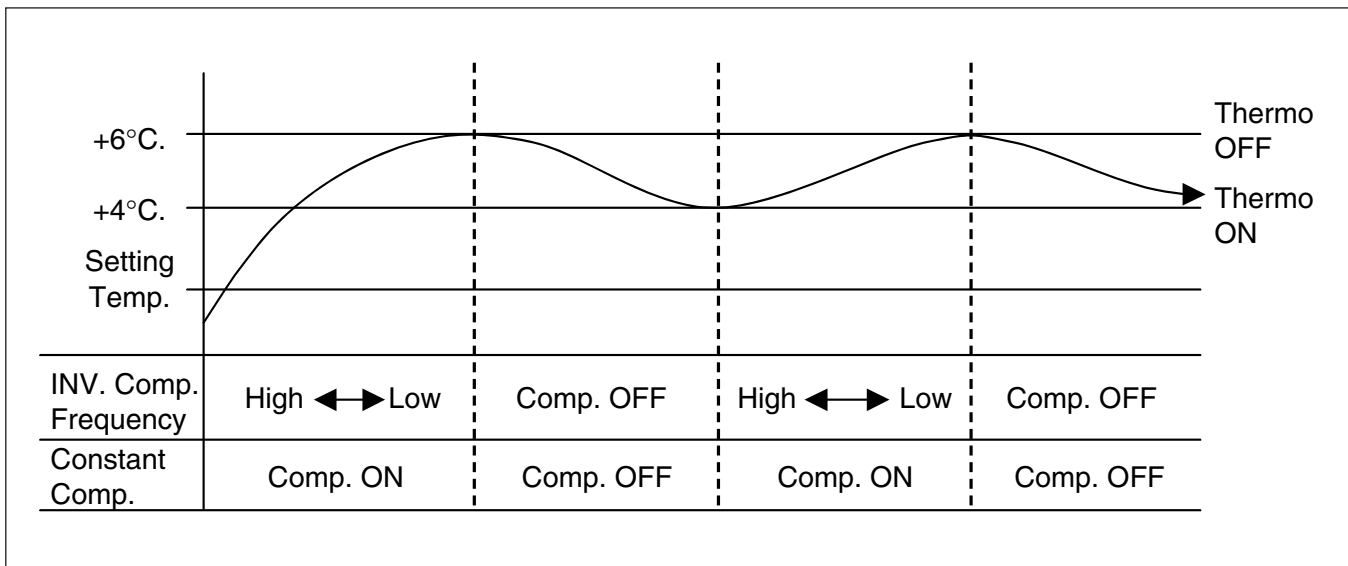
■ Cooling & heating Opeattions

6.1.1 Cooling Mode



- Operating frequency of compressor depends on the load condition.
- If the compressor operates at some frequency, the operating frequency of compressor cannot be changed within 90 seconds. (not emergency conditions)
- Compressors 3 minutes time delay.
 - After compressor off, the compressor can restart minimum 3 minutes later.

6.1.2 Heating Mode



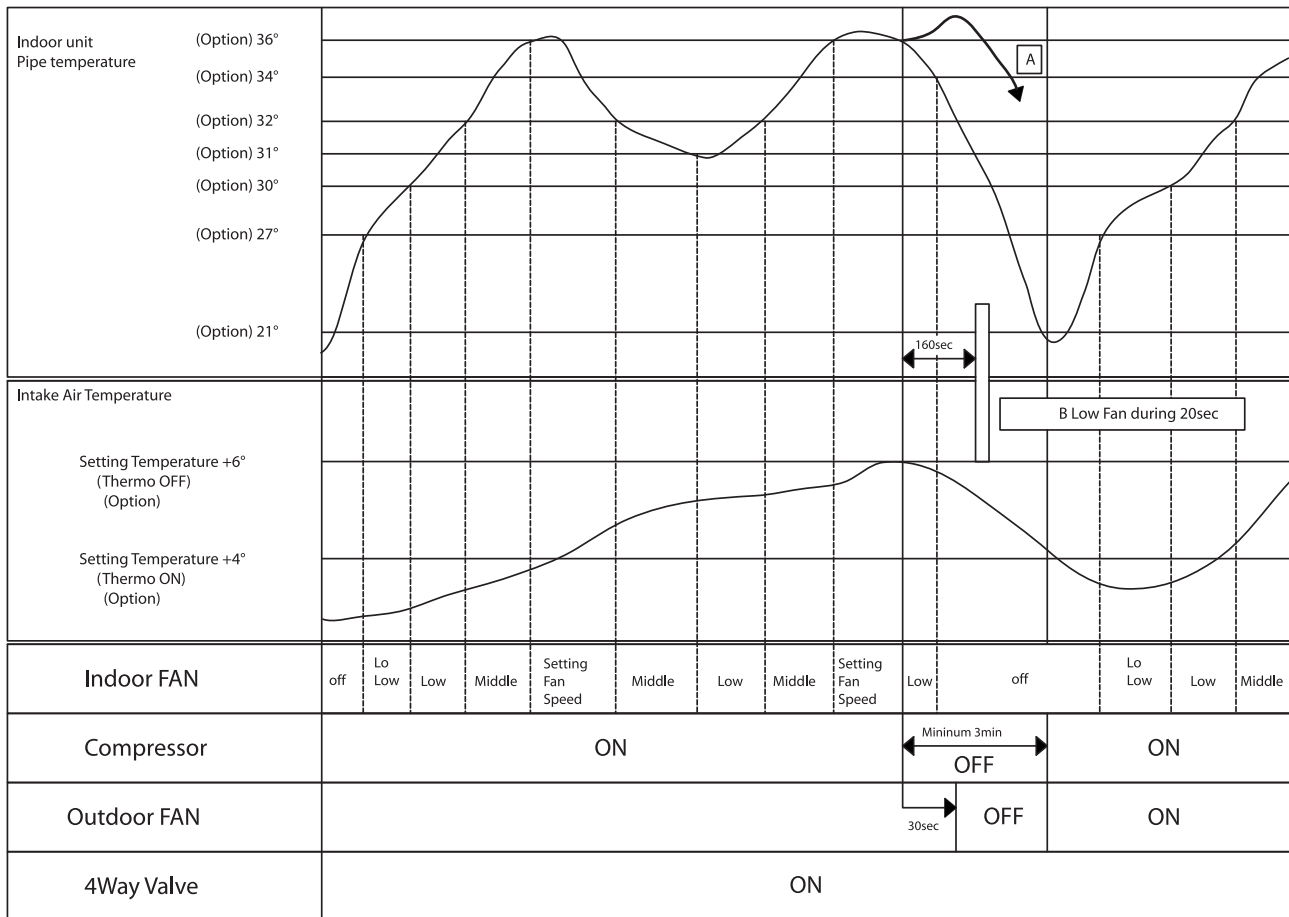
- Operating frequency of compressor depend on the load condition.
- If compressor operates at some frequency, the operating frequency of compressor cannot be changed within 90 seconds.
- Condition of compressor turned off
 - When intake air temperature reaches +6°C above the setting temperature.
- Condition of compressor turned on
 - When intake air temperature reaches +4°C above the setting temperature.
- * Condition of indoor fan turned off
 - Indoor pipe temp. < 27°C (Option)
- While in defrost control, between the indoor and outdoor fans are turned off.
- Compressor 3 minutes delay
 - After compressor off, the compressor can restart minimum 3 minutes later.

NOTE: Some Models are different by temperature of thermo ON/OFF.

* Some Models are different with temperature of indoor fan ON/OFF

■ Heating Mode Operation Details

The unit will operate according to the setting by the remote controller and the operation diagram is shown as following.



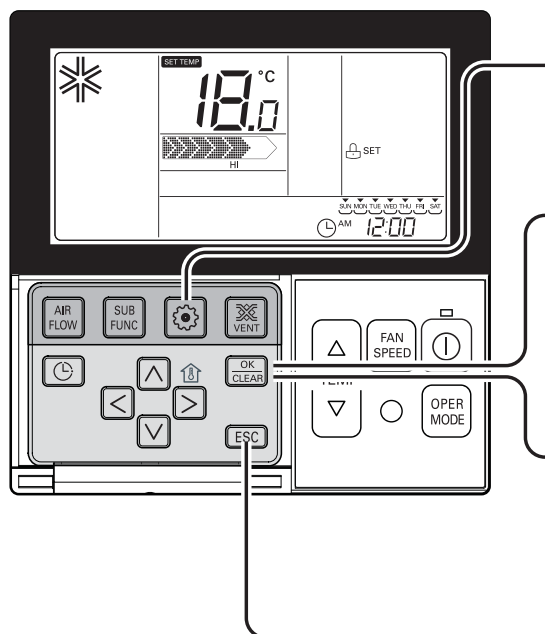
- **Compressor-off interval** : - ① While the indoor Heat-Exchanger temperature is higher than 36°C, fan operates at low speed, when it becomes lower than 34°C fan stops.
- ② For eliminating latent heat-loss, fan operates at low speed for 20 seconds periodically.










6.2 Child Lock Function

This function prevents children or others from tampering with the control buttons on the unit. It is then controlled by the remote controller.

- All the buttons on indoor display panel will blocked.
- The unit will be controlled only by remote controller.

The function is used to restrict children to not to use the air conditioner carelessly.(CL is an abbreviated form of Child Lock.)



- 1** Press  button repeatedly until the  is flashing.
- 2** If moving to 'setup' icon area by using   button, 'setup' icon blinks, and child lock function is setup if pressing  button at that time.
- 3** When cancelling lock function, if moving to 'cancel' icon by pressing   button and then, pressing  button, child lock function is cancelled.
- 4** Press  button to exit.
 - * After setup, it automatically gets out of setup mode if there is no button input for 25 seconds.
 - * When exiting without pressing set button, the manipulated value is not reflected.

6.3 Forced operation

- To operate the appliance by force in case when the remote control is lost, the forced operation selection switch is on the main unit of the appliance, and operate the appliance in the standard conditions.
- The operating condition is set according to the outdoor temp. and intake air temperature as follows.

Indoor temp.	Operating Mode	Setting temp.	Setting speed of indoor fan
over 24°C	Cooling	22°C	High speed
21~24°C	Healthy Dehumidification	22°C	
below 21°C	Heating	22°C	

- The unit select the last operation mode in 3 hours.
- Operating procedures when the remote control can't be used is as follows :
 - The operation will be started if the ON/OFF button is pressed.
 - If you want to stop operation, re-press the button.

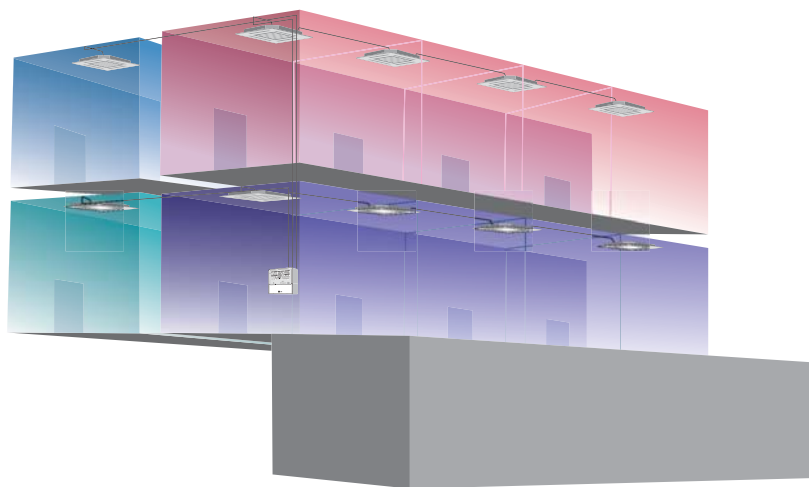
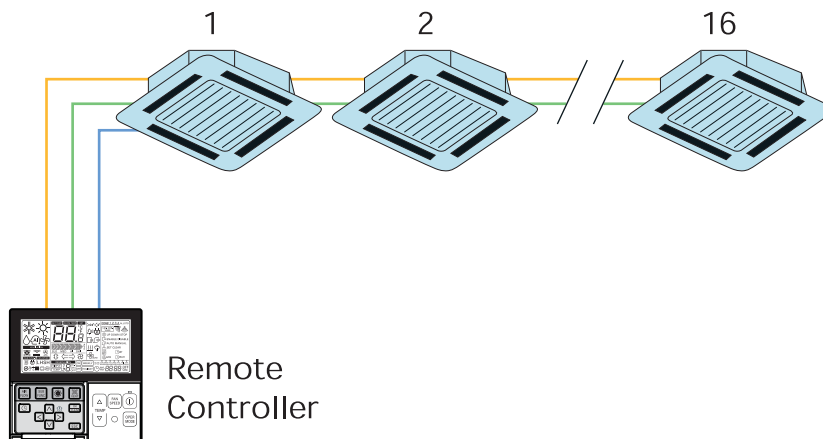
6.4 Group Control

6.4.1 Operation Summary

- Where several products are linked, one specific control device can control a specific number of products.

6.4.2 Specific Operation

- Connecting line is linked to each of the indoor equipments for communication.
A specific control device is connected to each of them and this control device can control the same function.
- Group control function is enabled by cutting an optional jump wire in the wired remote control. At this time, the main system will not respond in order to prevent data collision.
- While executing group control command, use the random data(0-3minutes) in the main body of indoor equipment for limiting starting current.
- Control device can control up to 16 indoor equipments.

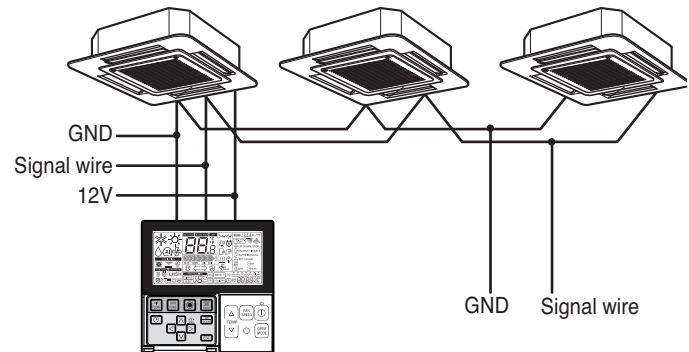


6.4.3 Group Control

- You can use a group control operation after connecting the brown and yellow wire of each air-conditioner.
- It operates maximum 16 Units by only one Wired Remote Controller, and each Unit starts sequentially to prevent overcurrent.

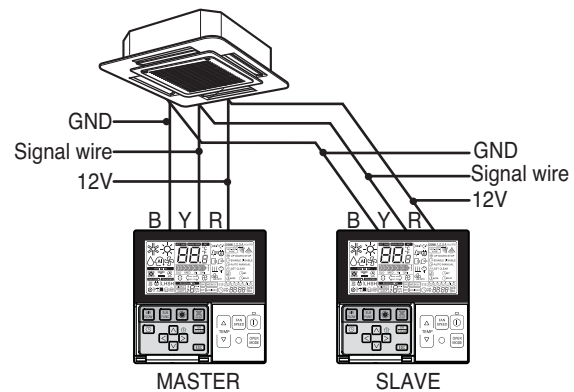
1) When installing more than 2 units of air conditioner to one wired remote controller, please connect as the right figure.

- If it is not event communication indoor unit, set the unit as slave.
- Check for event communication through the product manual.
- Refer to regarding page on how to set the slave.



2) When installing more than 2 wired remote controllers to one air conditioner, please connect as the right picture.

- When installing more than 2 units of wired remote controller to one air conditioner, set one wired remote controller as master and the others all as slaves, as shown in the right picture.
- Refer to Installer setting section on how to set master/slave.
- You cannot control the group as shown in the right for some products.



<When simultaneously connecting 2 sets of wired remote controller>

⚠ CAUTION

- Be careful not to exchange the color of wires.
- The maximum length of connecting wire should be below 200m(25Ω) on connecting each units.
- Use a wire more than 0.5mm²

6.5 Sleep Timer Operation

- When the sleep time is reached after <1,2,3,4,5,6,7,0(cancel) hr> is input by the remote control while in appliance operation, the operation of the appliance stops.
- While the appliance is on pause, the sleep timer mode cannot be input.
- While in cooling mode operation, 30 min later since the start of the sleep timer, the setting temperature increases by 1°C. After another 30 min elapse, it increases by 1°C again.
- When the sleep timer mode is input while in cooling cycle mode, the airflow speed of the indoor fan is set to the low.
- When the sleep timer mode is input while in heating cycle mode, the airflow speed of the indoor fan is set to the medium.

6.6 Timer(On/Off)

6.6.1 On-Timer Operation

- When the set time is reached after the time is input by the remote control, the appliance starts to operate.
- The timer LED is on when the on-timer is input. It is off when the time set by the timer is reached.
- If the appliance is operating at the time set by the timer, the operation continues.
While in Fuzzy operation, the airflow speed of the indoor fan is automatically selected according to the temperature.

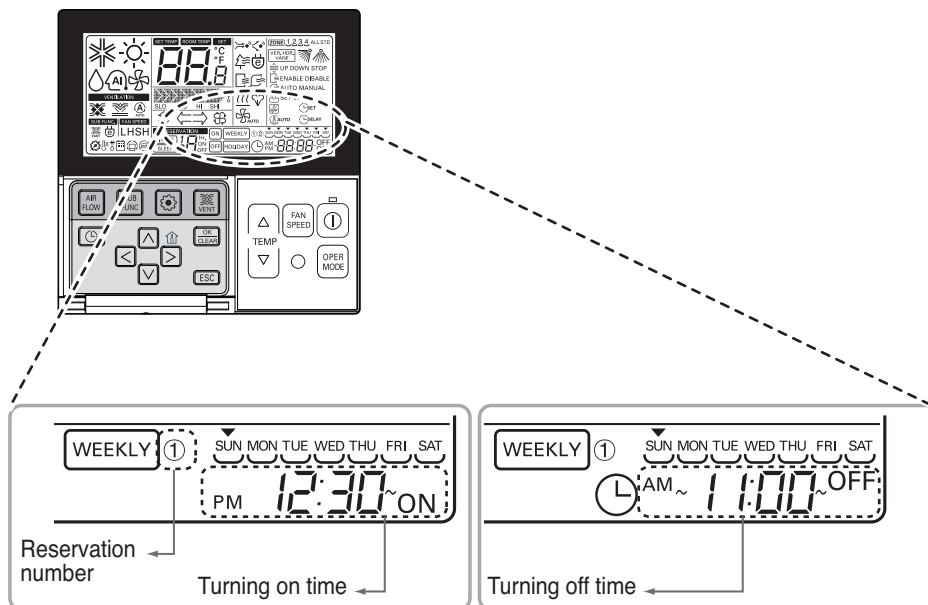
6.6.2 Off-Timer Operation

- When the set time is reached after the time is input by the remote control, the appliance stops operating.
- The timer LED is on when the off-timer is input. It is off when the time set by the timer is reached.
- If the appliance is on pause at the time set by the timer, the pause continues.

6.7 Weekly Program

- If necessary, an operator can make an On/Off reservation of the product for a period of one week.
- On/Off schedule of operation for a period of One week.
- No need to turn the unit On/Off manually during working days.
On/Off time is scheduled in micom of the wired remote control.

Operation Time Table (Example)



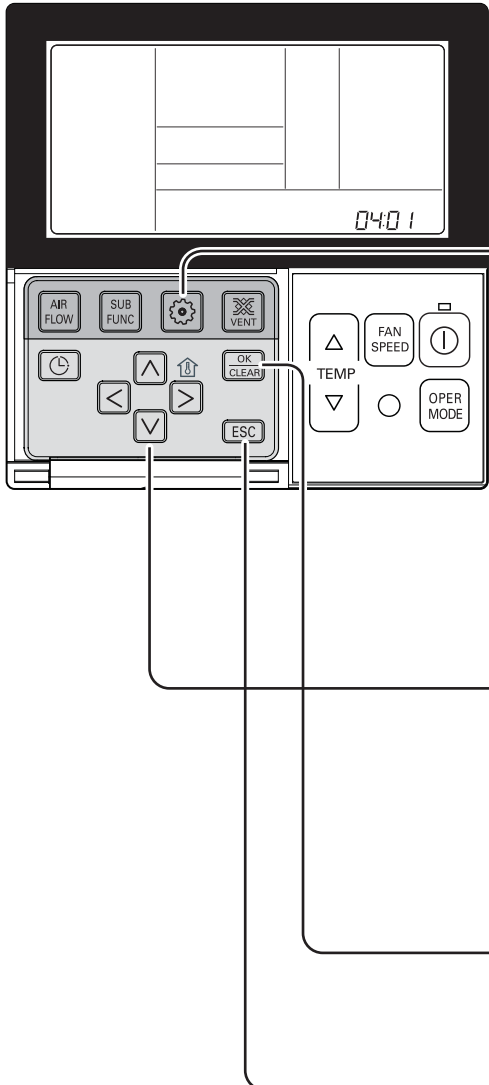
* Two actions per weekday can be programmed, in total 14 actions

6.8 Two Thermistor Control


There may be a significant difference between temperature taken at the installed product indoor temperature. Two thermistor control provides option to control temperature by referring any of the two temperatures.



With help of the slide switch at the back of the wired remote controller, selection of the thermistor for controlling the unit can be One thermistor is in the Indoor unit & the one is in the LCD wired remote.

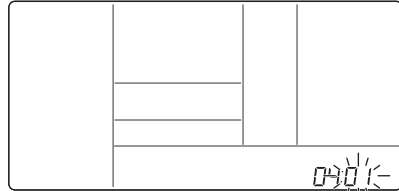


■ Two Thermistor System

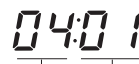


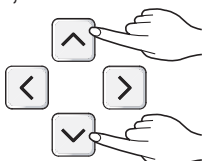

The diagram shows a remote controller with various buttons. Callouts from the steps point to specific buttons: Step 1 points to the gear icon button; Step 2 points to the gear icon button; Step 3 points to the up and down arrow buttons; Step 4 points to the OK/CLEAR button; Step 5 points to the ESC button.


- If pressing  button long for 3 seconds, it enters into remote controller setter setup mode.
- If pressing once shortly, it enters into user setup mode. Please press more than 3 seconds for sure.




- If moving to room temperature perception sensor selection menu by pressing  button, it indicates as picture below.


- Set Thermistor value by pressing   button. (01: Remote Controller, 02: Indoor, 03: 2TH)


 ↓ ↓
 Function Code Thermistor setting


- Press  button to save.




- Pressing  button will exit settings mode.
 * After setup, it automatically gets out of setup mode if there is no button input for 25 seconds.
 * When exiting without pressing set button, the manipulated value is not reflected.

<Thermistor Table>

Temperature sensor selection		Function
01	Remote controller	Operation in remote controller temperature sensor
02	Indoor unit	Operation in indoor unit temperature sensor
03	2TH	Cooling Operation of higher temperature by comparing indoor unit's and wired remote controller's temperature. (There are products that operate at a lower temperature.)
		Heating Operation of lower temperature by comparing indoor unit's and wired remote controller's temperature.

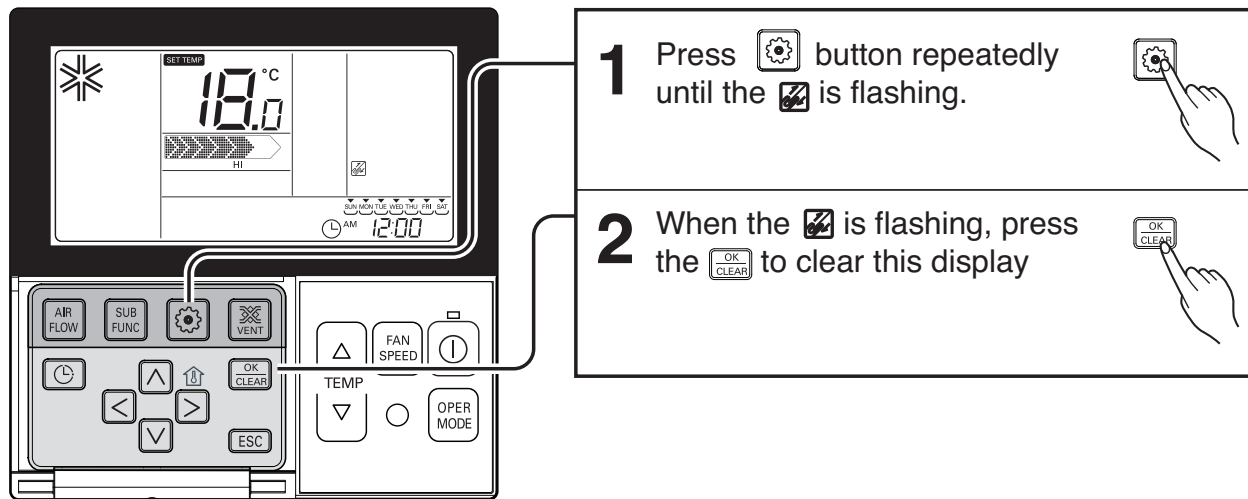
* The function of 2TH has different operation characteristics according to the product.

CAUTION

- Select the temperature sensor location after counselling with a customer.
- In case of cooling mode, room temperature is controlled by the main body sensor.
- To control the room temperature by a wired remote controller, install controller(room temp. sensor) to sense the temperature more accurately.

6.9 Filter Sign clear

This function is to clear the indicator of indoor filter cleaning



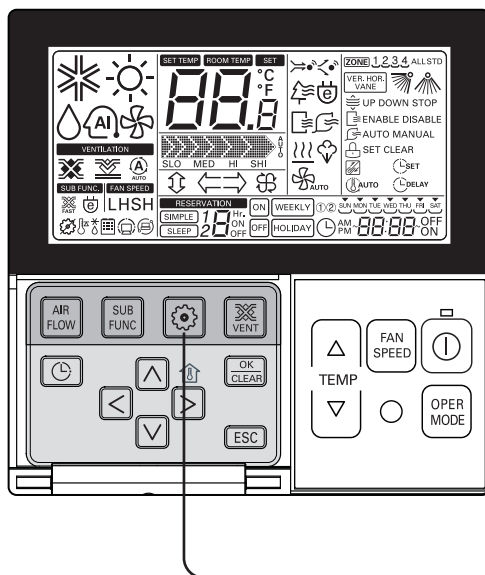
7. Special Function


Installer Setting -How to enter installer setting mode

⚠ CAUTION

Installer setting mode is to set the detail function of the remote controller.


If the installer setting mode is not set correctly, it can cause problems to the product, user injury or property damage. This must be set by a certificated installer, and any installation or change that is carried out by a non-certificated person should be responsible for the results. In this case, free service cannot be provided.



1 If pressing  button long for 3 seconds, it enters into remote controller setter setup mode.

- If pressing once shortly, it enters into user setup mode. Please press more than 3 seconds for sure.

2 When you enter the setting mode initially, Function code is displayed on the bottom of the LCD screen.


 Function Code Value

- Some categories of the menu may not be displayed according to the function of the product, or the menu name may be different.

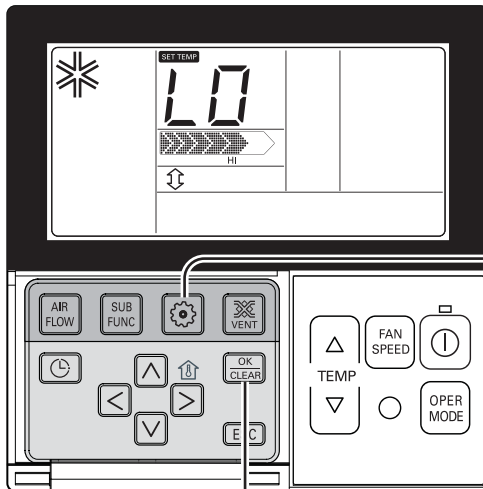
<Installer Setting Code Table>


No.	Function	Code	Value
1	Test Run	01	01:Set
2	Address Setting	02	00~FF : Address
3	E.S.P. Value	03	<div> <div> <div><ESP Step></div> <div>01:VeryLow</div> <div>02:Low</div> <div>03:Med</div> <div>04:High</div> <div>05:Very High</div> </div> <div> <div><ESP Value></div> <div>0 ~ 255</div> <div>0300:155</div> <div> <div>Function Code</div> <div>ESP step</div> <div>ESP value</div> </div> </div> </div>
4	Thermistor	04	01:Remo 02:Indoor 03:2TH
5	Ceiling Height	05	01:Med 02:Low 03:High 04:Very High
6	Static Pressure	06	01:V-H 02:F-H 03:V-L 04:F-L
7	Group Setting	07	00:Slave 01:Master
8	Override Setting	08	00:Slave 01:Master
9	Dry Contact	09	00:OFF 01:ON
10	Release 3 Min. Delay	10	01:Set
11	Zone State	11	01:Variable 02:Fixed
12	Celsius Fahrenheit Switching	12	00:Celsius 01:Fahrenheit (Optimized only for U.S.A)
13	Zone Type	13	00:Old 01:New
14	Zone Number	14	02~04(Zone number)
15	Plasma	20	00: Not Installed 01: Installed
16	Electric heater	21	
17	Humidifier	22	
18	Elevation Grill	23	
19	Ventilation Kit	24	

* Some contents may not be displayed depending on the product function

Installer Setting -Test Run Mode

After installing the product, you must run a Test Run mode.
For details related to this operation, refer to the product manual.



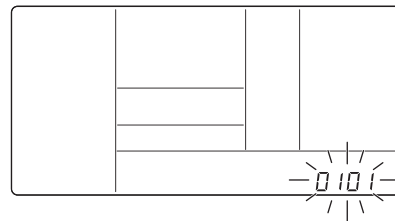
1 If pressing  button long for 3 seconds, it enters into remote controller setter setup mode.

- If pressing once shortly, it enters into user setup mode. Please press more than 3 seconds for sure.
- Please cancel the right and left of wind direction for RAC product.

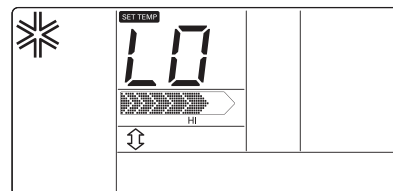
0 1 0 1

Function Code Set

2 Setup figure '01' blinks at the lower part of indication window.



3 Press  button to start.

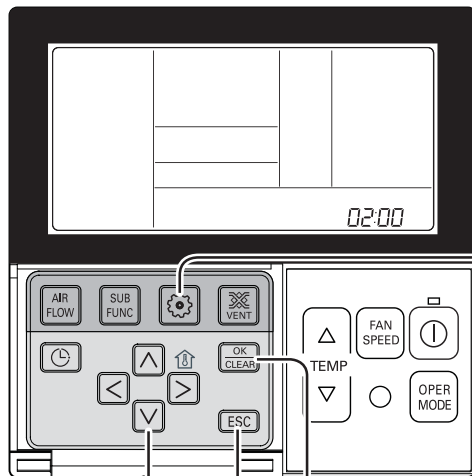


4 During the test run, pressing the below button will exit the test run.

- Select operation, temperature up/down, wind flow control, wind direction, start/stop button.

- * 18°C cooling, High Fan Speed, Airflow direction mode will be operated during 18 minutes with ignoring room temperature.
 - * After running 18 minutes under test run mode, system will automatically turn OFF.
 - * In case of duct type, the Airflow UP/DOWN function is not displayed.
 - * During test run mode, receiving signal from wireless remote controller will release this operation.
- If you press any kind of button, Test Run mode will be released.

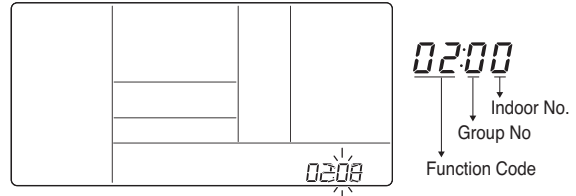
Installer Setting - Setting Address of Central Control



1 If pressing button long for 3 seconds, it enters into remote controller setter setup mode.
- If pressing once shortly, it enters into user setup mode. Please press more than 3 seconds for sure.

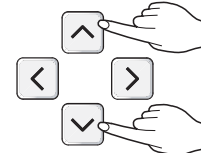


2 If entering into address setup mode by using button, it indicates as picture below.



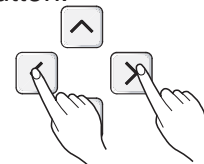
3 Set Group No. by pressing button.(0~F)

02:F0



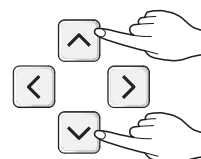
4 Move to Indoor No. setting option by pressing button.

02:F0



5 Set Indoor No. by pressing button.

02:F5



6 Press button to save.

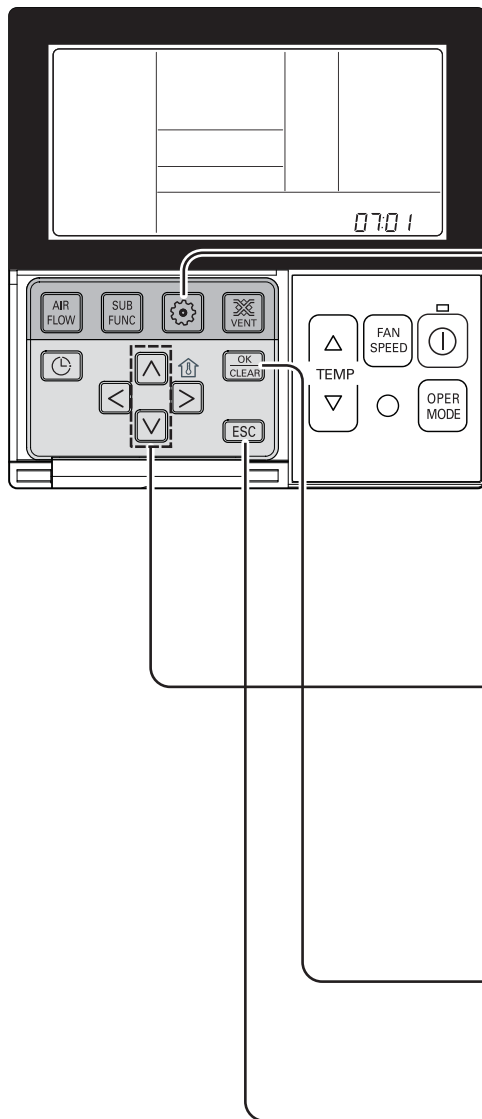
02:F5




7 Pressing button will exit settings mode.
* After setup, it automatically gets out of setup mode if there is no button input for 25 seconds.
* When exiting without pressing set button, the manipulated value is not reflected.

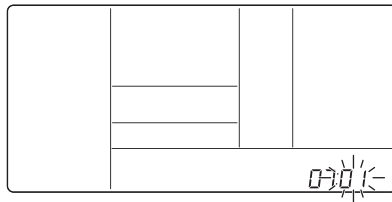
Installer Setting-Group Setting

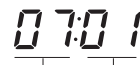
This function is only for group control operation. Please don't set this function in case of non-group control.

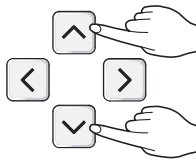



- 1** If pressing button long for 3 seconds, it enters into remote controller setter setup mode.
- If pressing once shortly, it enters into user setup mode. Please press more than 3 seconds for sure.



- 2** If pressing button repeatedly, it moves to master/slave selection menu as picture below.


- 3** Select Master/ Slave by pressing button.
(00: Slave, 01: Master)


 Function Code Master/Slave value


- 4** Press button to save.




- 5** Pressing button will exit settings mode.
 * After setup, it automatically gets out of setup mode if there is no button input for 25 seconds.
 * When exiting without pressing set button, the manipulated value is not reflected.

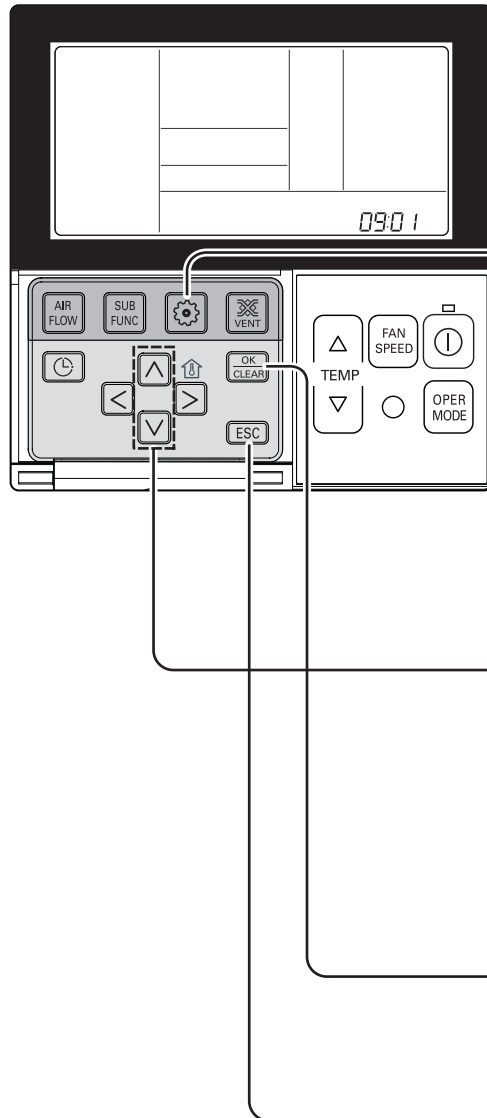
Remote controller	Function
Master	Indoor unit operates based on master remote controller at group control. (Master is set when delivering from the warehouse.)
Slave	Setup all remote controllers except one master remote controller to slave at group control

* Refer to the 'group control' part for details

- When controlling in groups, basic operation settings, airflow strength weak/medium/strong, lock setting of the remote controller, time settings, and other functions may be restricted.

Installer Setting-Dry Contact Mode Setting

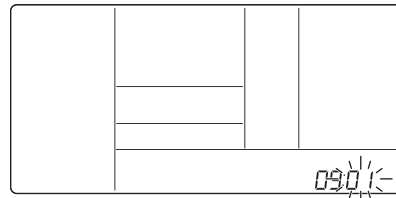
This function allows the Dry contact-indoor unit operate under Auto Run mode or Manual mode with remote controller.



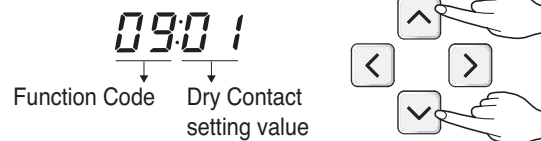
1 If pressing button long for 3 seconds, it enters into remote controller setter setup mode.
- If pressing once shortly, it enters into user setup mode. Please press more than 3 seconds for sure.



2 If pressing button repeatedly, it moves to remote controller dry contact mode setup menu as picture below.



3 Select Dry contact setting by pressing button.
(00 : Automatic, 01 : manual)



4 Press button to save.

0901



5 Pressing button will exit settings mode.
* After setup, it automatically gets out of setup mode if there is no button input for 25 seconds.
* When exiting without pressing set button, the manipulated value is not reflected.

► What is Dry Contact?

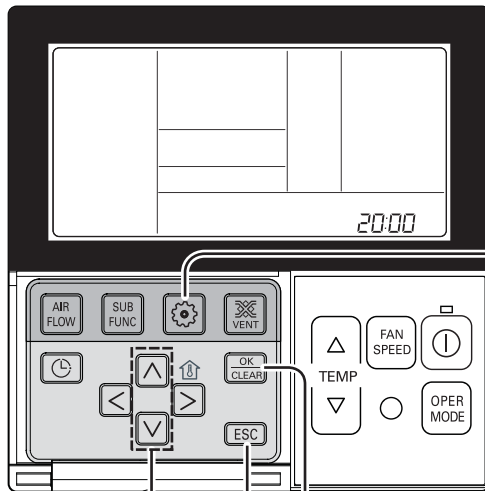
Like hotel card key and body perception sensor, it is the signal of the point of contact when using air-conditioner by inter-locking.


• Please refer to dry contact manual for more details.

Installer Setting -Optional Function Setting


For the optional product such as PLASMA PURIFICATION/dehumidifier/ electric heater and ventilation, elevation grill.

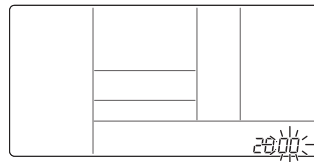
It is possible to set the items are installed or not





- 1 If pressing  button long for 3 seconds, it enters into remote controller setter setup mode.
- If pressing once shortly, it enters into user setup mode. Please press more than 3 seconds for sure.

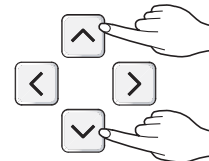


- 2 If pressing  button repeatedly, it moves to the selected option function code as picture below.



Function	Code
Plasma purification	20
Electric heater	21
Dehumidifier	22
Elevation grill	23
Ventilation kit	24

- 3 Select existing condition of each mode by pressing   button.
(00: not installed,
01 : installed)




2001

Function Code

Existing condition

- 4 Press  button to save.



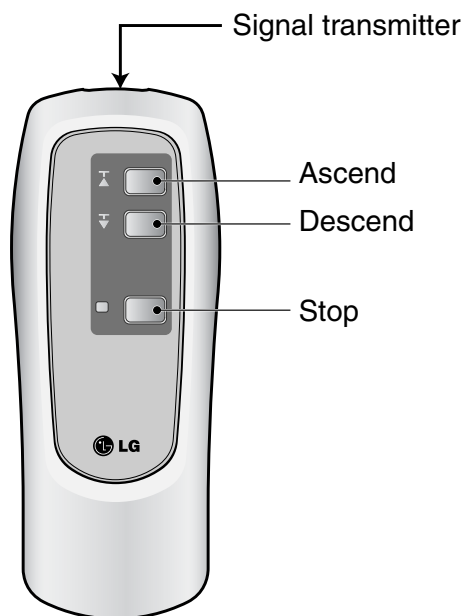
- 5 Pressing  button will exit settings mode.
* After setup, it automatically gets out of setup mode if there is no button input for 25 seconds.
* When exiting without pressing set button, the manipulated value is not reflected.

7.1 Auto Elevation Grille

- Auto Elevation Grille is automatically down to height of max. 3.1 m. So it enables to install the Indoor unit at high ceiling space. And Auto Elevation Grille makes you cleaning the filter easily.



■ ELEVATION GRILL (REMOTE CONTROLLER_Accessory)



• Main Components of Lift Grill

- ① Lift grill front panel assembly
- ② Bolts for installation (4 EA, P/No. 3A00255K)
- ③ Instruction manual
- ④ Remote Controller for lift grill

• How to Use Remote Controller

As for operation of Remote Controller, use it by directing the transmitter part of Remote Controller to the receiver part of front panel directly under front panel.

- Do not drop it down or into water. Or else there is worry about trouble failure.
- Do not press hard the Remote Controller button with nail (ball-point pen or other sharp substance). Or else there is worry about trouble failure.
- In case when obstacle such as curtain hides the signal reception part of receiver in between the space interval, Remote Controller operation is infeasible.

3. Trouble Shooting

1. Self-diagnosis Function.....40

2. Pump Down.....42

3. Evacuation (All amount of refrigerant leaked)43

4. Gas Charging (After Evacuation)44

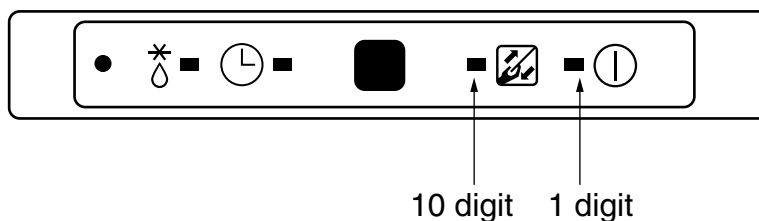
5. Cycle Part.....45

6. Electronic Parts46

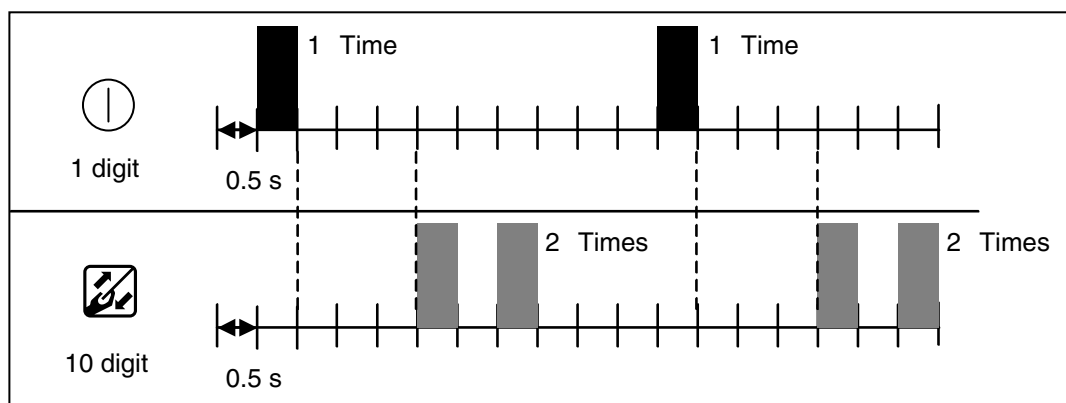
1. Self-diagnosis Function

1.1 Error Indicator (Indoor)

- The function is to self-diagnosis air conditioner and express the troubles if there is any trouble.
- Error mark is displayed on display window of indoor units and wired-remote controller, and LED of outdoor unit control board.
- If more than two troubles occur simultaneously, lower number of error code is first displayed.
- After error occurs, if error is released, error LED is also released simultaneously.



Ex) Error 21 (DC Peak)



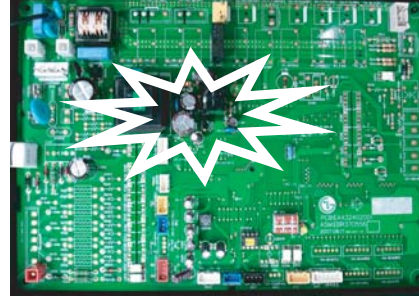
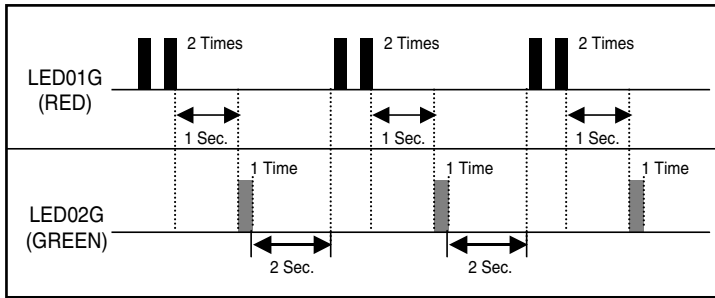
1.2 Indoor Error

Error code	Description	Inv.	1 digit LED	10 digit LED	Indoor status
01	Indoor Room sensor error	●	1time 1		OFF
02	Indoor in-pipe sensor error	●	2times 1		OFF
03	Remote controller error	●	3times 1		OFF
04	Drain pump error	●	4times 1		OFF
05	Communication error indoor and outdoor	●	5times 1		OFF
06	Indoor out-pipe sensor error	●	6times 1		OFF
09	EEPROM error (indoor)	●	9times 1		OFF
10	BLDC motor fan lock (indoor)	●	10times 1		OFF

1.3 Error Indicator (Outdoor)

Outdoor Error

Ex) Error 21 (DC Peak)



Outdoor Error

Error Code	Description	Inv.	LED 1 (Red)	LED 2 (Green)	Indoor status
21	DC Peak(IPM Fault)	●	2times ●	1time ●	OFF
22	Max. CT(CT2)	●	2times ●	2times ●	OFF
23	DC Link Low Volt.	●	2times ●	3times ●	OFF
24	Pressure switch/Heater Sink.	●	2times ●	4times ●	OFF
26	DC Comp Position Error	●	2times ●	6times ●	OFF
27	PSC Fault Error	●	2times ●	7times ●	OFF
28	DC Link High Volt.	●	2times ●	8times ●	OFF
29	Comp Over Current	●	2times ●	9times ●	OFF
32	D-Pipe High(Inv.)	●	3times ●	2times ●	OFF
41	Inv. D-Pipe Th Error(Open/Short)	●	4times ●	1time ●	OFF
44	Outdoor air Th Error(Open/Short)	●	4times ●	4times ●	OFF
45	Cond. Middle Pipe Th Error(Open/Short)	●	4times ●	5times ●	OFF
46	Suction Pipe Th Error(Open/Short)	●	4times ●	6times ●	OFF
48	Cond. Out-Pipe Th Error(Open/Short)	●	4times ●	8times ●	OFF
51	Capacity over	●	5times ●	1time ●	OFF
53	Communication Error(Indoor↔Outdoor)	●	5times ●	3times ●	OFF
60	EEPROM Error(Outdoor)	●	6times ●	0	OFF
61	Cond. Middle Pipe High	●	6times ●	1time ●	OFF
62	Heatsink Error(High)	●	6times ●	2times ●	OFF
65	Heatsink Th Error(Open/Short)	●	6times ●	5times ●	OFF
67	BLDC motor fan lock(Outdoor)	●	6times ●	7times ●	OFF
73	PFC Fault Error(S/W)	●	7times ●	3times ●	OFF



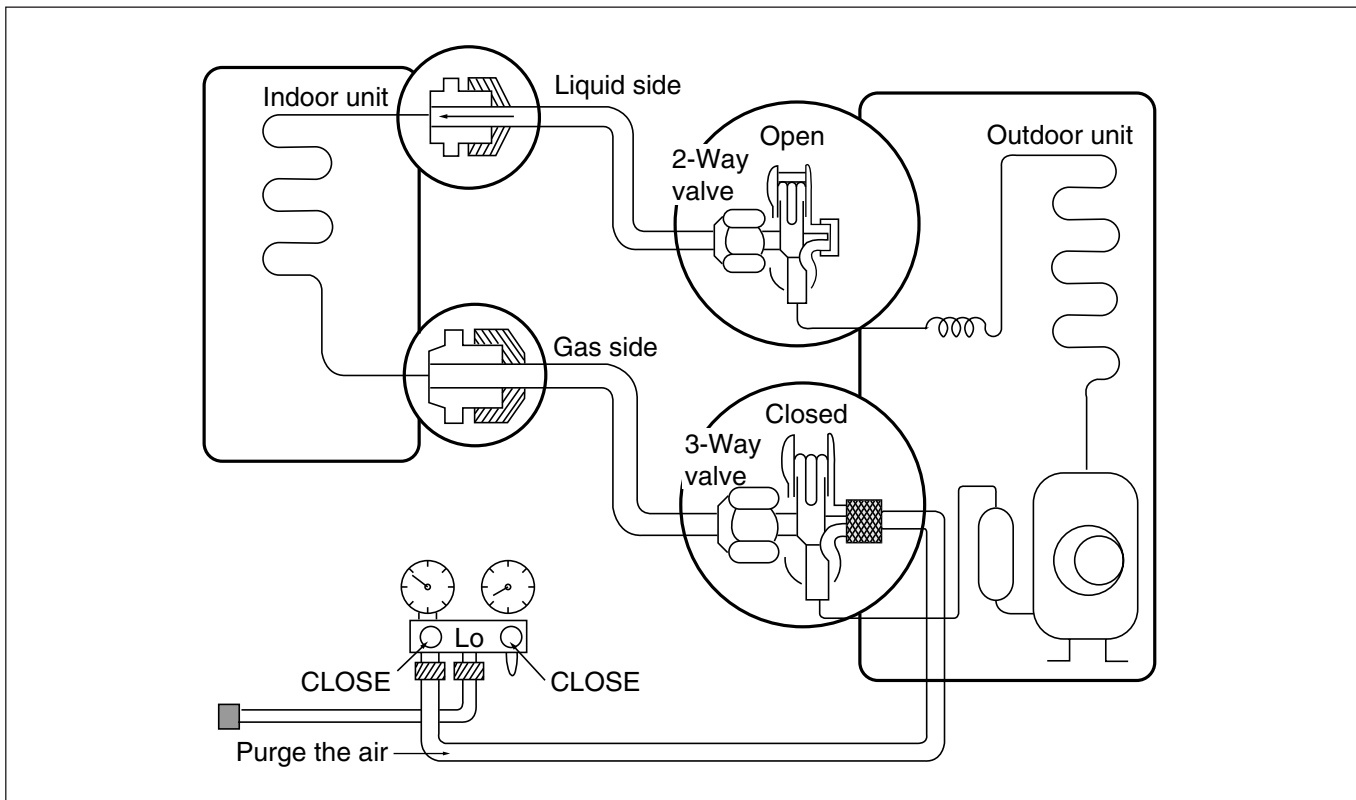
CAUTION

Precaution in Service or Check

Even after stopping the operation of product, it takes some time to discharge the remaining electricity of the electrolytic capacitor that was charged early.

Before conducting a checking or repairing job, pull out the plug out of the outlet and make sure that the lamp on the control board outdoor unit is off.

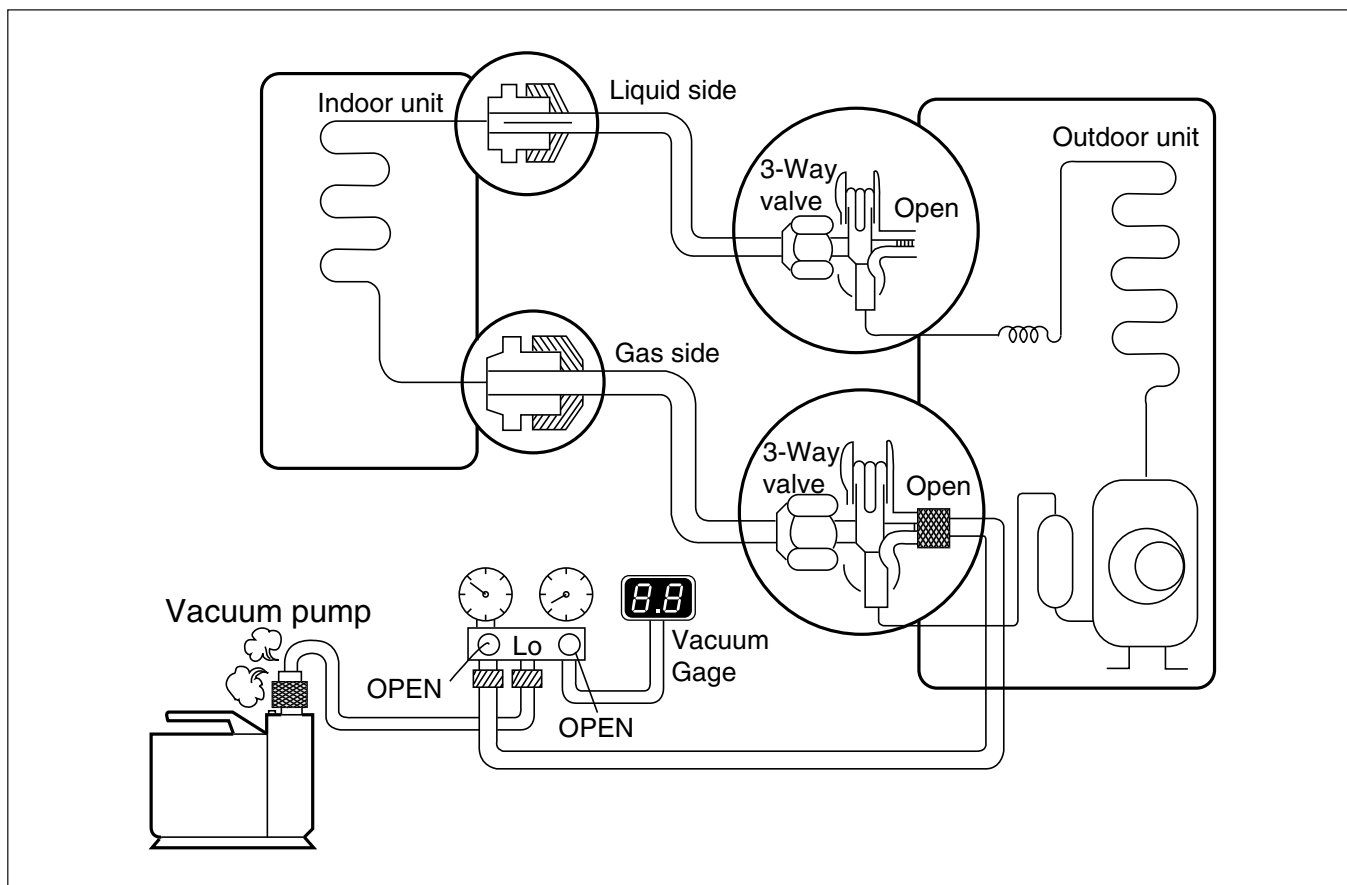
2. Pumping Down



• Procedure

- (1) **Confirm that both the 2-way and 3-way valves are set to the open position.**
 - Remove the valve stem caps and confirm that the valve stems are in the raised position.
 - Be sure to use a hexagonal wrench to operate the valve stems.
- (2) **Operate the unit for 10 to 15 minutes.**
- (3) **Stop operation and wait for 3 minutes, then connect the charge set to the service port of the 3-way valve.**
 - Connect the charge hose with the push pin to the service port.
- (4) **Air purging of the charge hose.**
 - Open the low-pressure valve on the charge set slightly to air purge from the charge hose.
- (5) **Set the 2-way valve to the closed position.**
- (6) **Operate the air conditioner at the cooling cycle and stop it when the gauge indicates 1kg/cm²g.**
- (7) **Immediately set the 3-way valve to the closed position.**
 - Do this quickly so that the gauge ends up indicating 3 to 5kg/cm²g.
- (8) **Disconnect the charge set, and mount the 2-way and 3-way valve's stem nuts and the service port nut.**
 - Use torque wrench to tighten the service port nut to a torque of 1.8 kg.m.
 - Be sure to check for gas leakage.

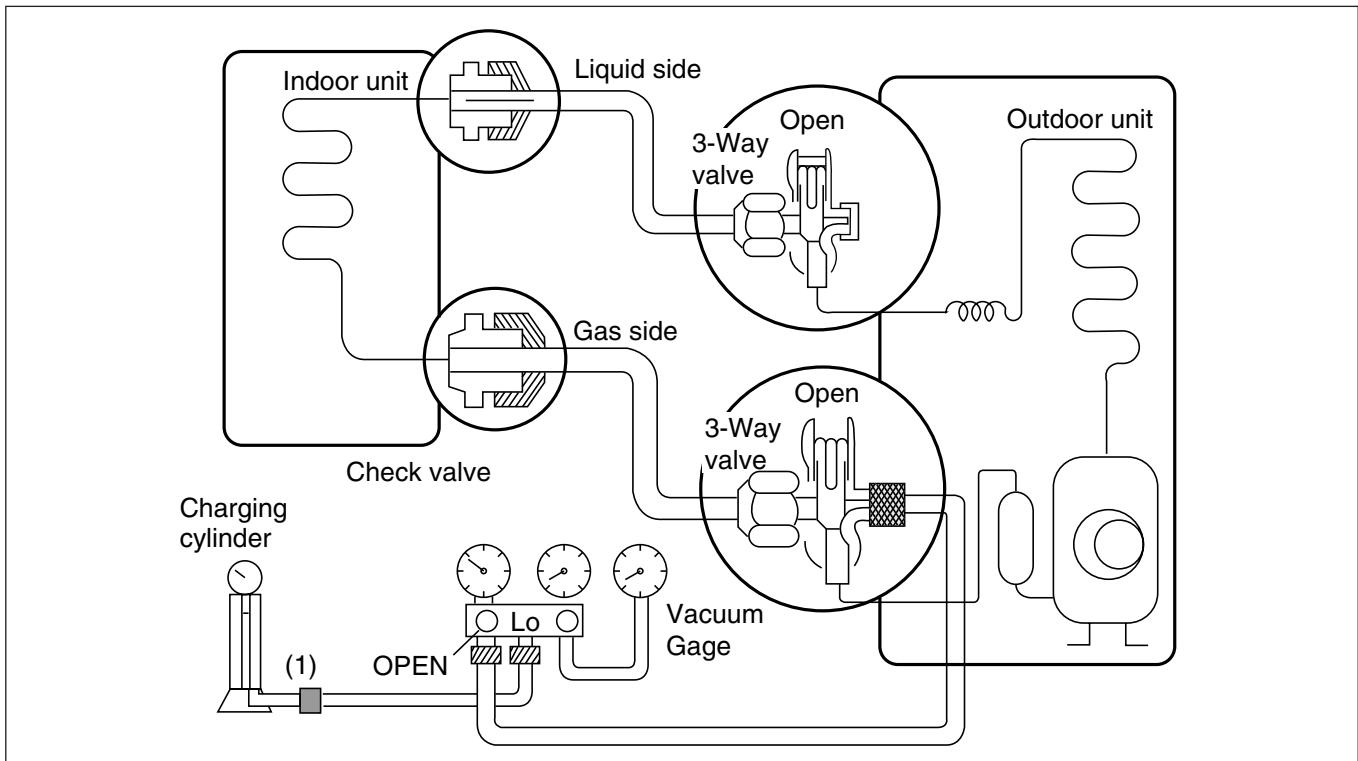
3. Evacuation (All amount of refrigerant leaked)



• Procedure

- (1) Connect the vacuum pump to the center hose of charge set center hose
- (2) Evacuation for approximately one hour.
 - Confirm that the gauge needle has moved toward 0.8Torr.
- (3) Close the valve (Lo side) on the charge set, turn off the vacuum pump, and confirm that the gauge needle does not move (approximately 5 minutes after turning off the vacuum pump).
- (4) Disconnect the charge hose from the vacuum pump.
 - Vacuum pump oil.
If the vacuum pump oil becomes dirty or depleted, replenish as needed.

4. Gas Charging (After Evacuation)



• Procedure

(1) Connect the charge hose to the charging cylinder.

- Connect the charge hose which you dis-connected from the vacuum pump to the valve at the bottom of the cylinder.
- If you are using a gas cylinder, also use a scale and reverse the cylinder so that the system can be charged with liquid.

(2) Purge the air from the charge hose.

- Open the valve at the bottom of the cylinder and press the check valve on the charge set to purge the air. (Be careful of the liquid refrigerant). The procedure is the same if using a gas cylinder.

(3) Open the valve (Lo side on the charge set and charge the system with liquid refrigerant.

- If the system can not be charged with the specified amount of refrigerant, it can be charged with a little at a time (approximately 150g each time) while operating the air conditioner in the cooling cycle; however, one time is not sufficient, wait approximately 1 minute and then repeat the procedure (pumping down-pin).

This is different from previous procedures.

Because you are charging with liquid refrigerant from the gas side, absolutely do not attempt to charge with larger amounts of liquid refrigerant while operating the air conditioner.

(4) Immediately disconnect the charge hose from the 3-way valve's service port.

- Stopping partway will allow the gas to be discharged.
- If the system has been charged with liquid refrigerant while operating the air conditioner turn off the air conditioner before disconnecting the hose.

(5) Mount the valve stem nuts and the service port nut.

- Use torque wrench to tighten the service port nut to a torque of 1.8 kg.m.
- Be sure to check for gas leakage.

5. Cycle Part

Trouble analysis

1. Check temperature difference between intake and discharge air, and check for the operating current too.

Case	Symptom	Supposed Caused
Case 1	Temp. difference : approx. 0°C Current : less than 80% of rated current	All amount of refrigerant leaked out. Check refrigeration cycle.
Case 2	Temp. difference : approx. 8°C Current : less than 80% of rated current	Refrigerant leakage Clog of refrigeration cycle Defective Compressor.
Case 3	Temp. difference : less than 8°C Current : over the rated current	Excessive amount of refrigerant
Case 4	Temp. difference : over 8°C	Normal

NOTICE

Temperature difference between intake and discharge air depends on room air humidity. When the room air humidity is relatively higher, temperature difference is smaller. When the room air humidity is relatively lower temperature difference is larger.



2. Check temperature and pressure of refrigeration cycle in cooling mode.

Suction pressure (Compared with the normal value)	Temperature of Discharge Air (Compared with the normal valve)	Cause of Trouble	Description
Higher	High	Defective compressor Defective 4-way reverse valve	Current is low.
	Normal	Excessive amount of refrigerant	High pressure does not quickly rise at the beginning of operation.
Lower	Higher	Insufficient amount of refrigerant (Leakage) Clogging	Current is low.

NOTICE

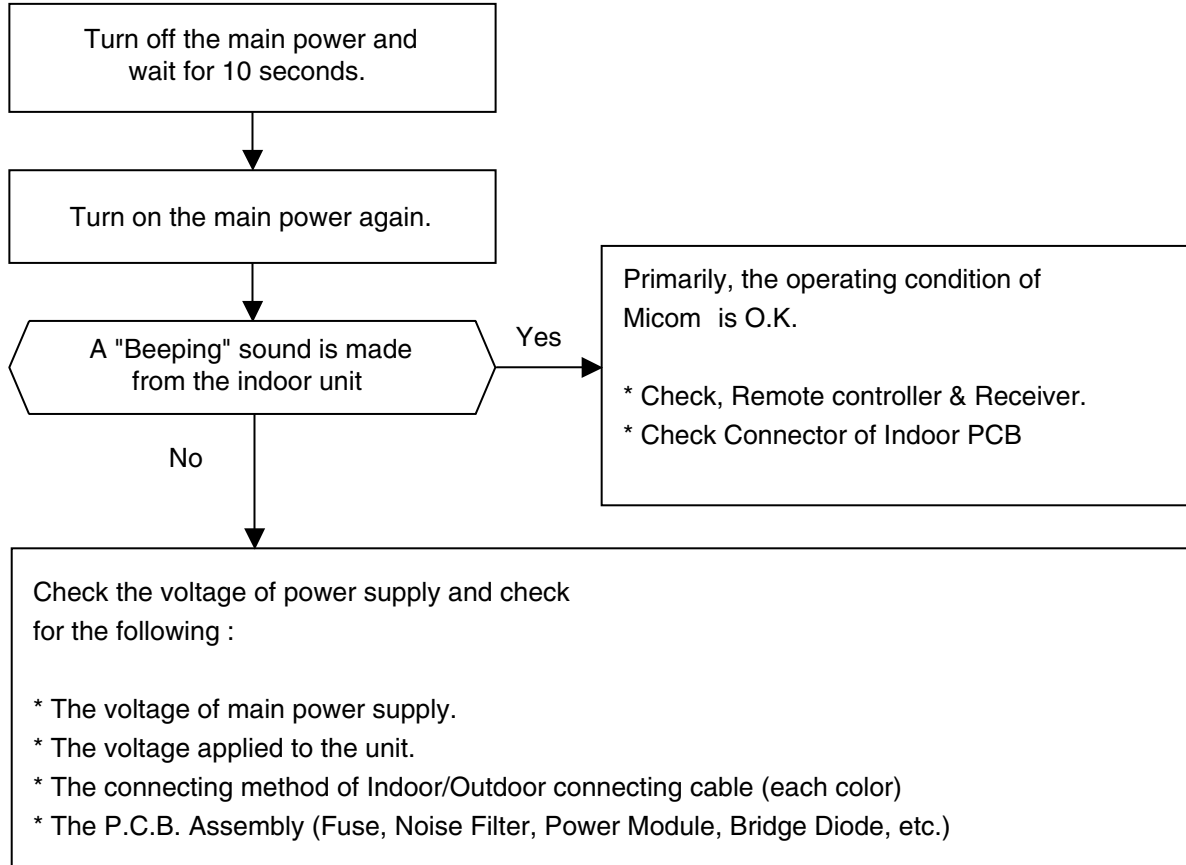
1. The suction pressure is usually 8.5~9.5kg/cm²G(Cooling) at normal condition.(R410A)

2. The temperature can be measured by attaching the thermometer to the low pressure tubing and wrap it with putty.

	Be sure to disconnect the power cable plug from the plug socket before disassembling the equipment for a repair. Internal components and circuit boards are at main potential when the equipment is connected to the power cables. This voltage is extremely dangerous and may cause death or severe injury if come in contact with it.
	Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.

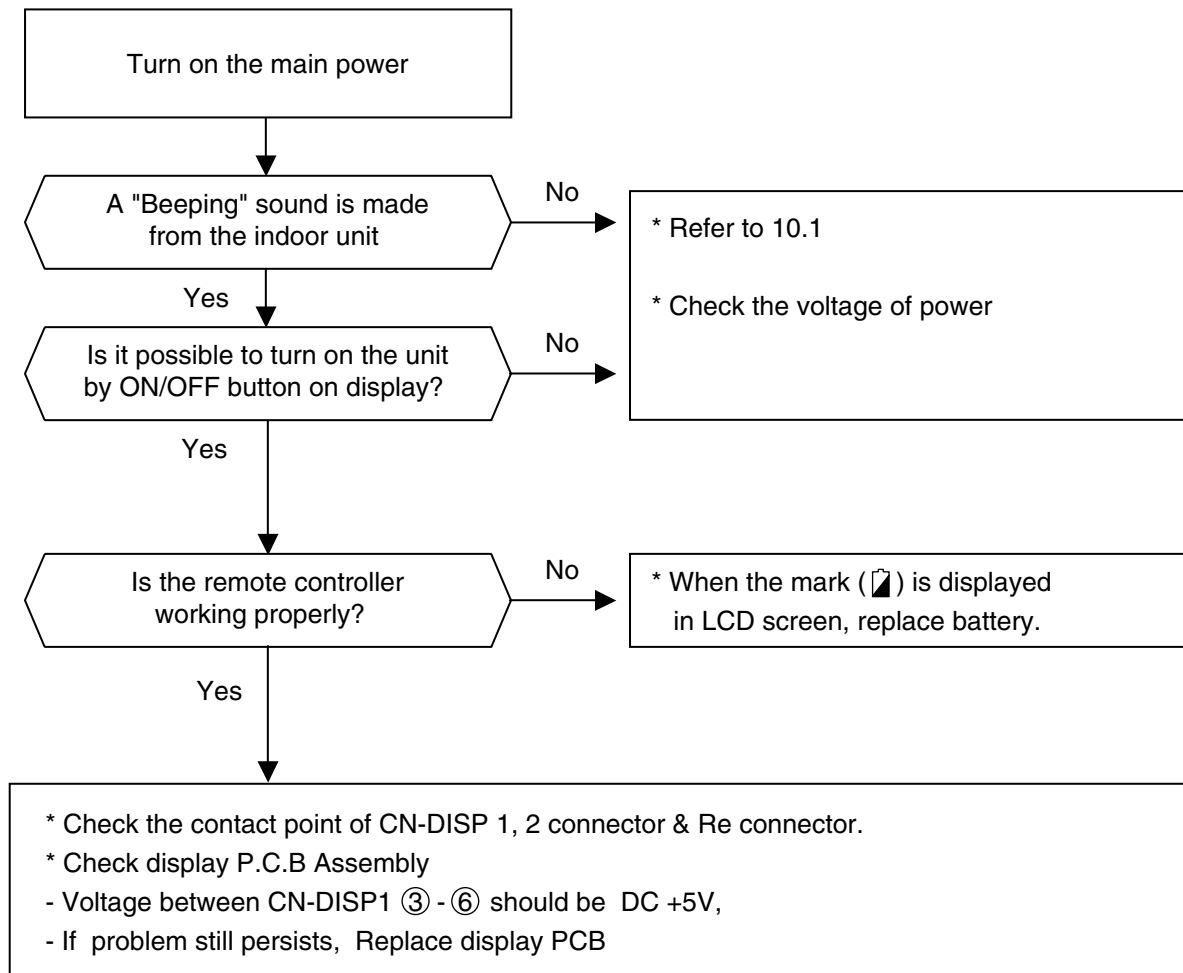
6. Electronic Parts

6.1 The Product doesn't operate at all



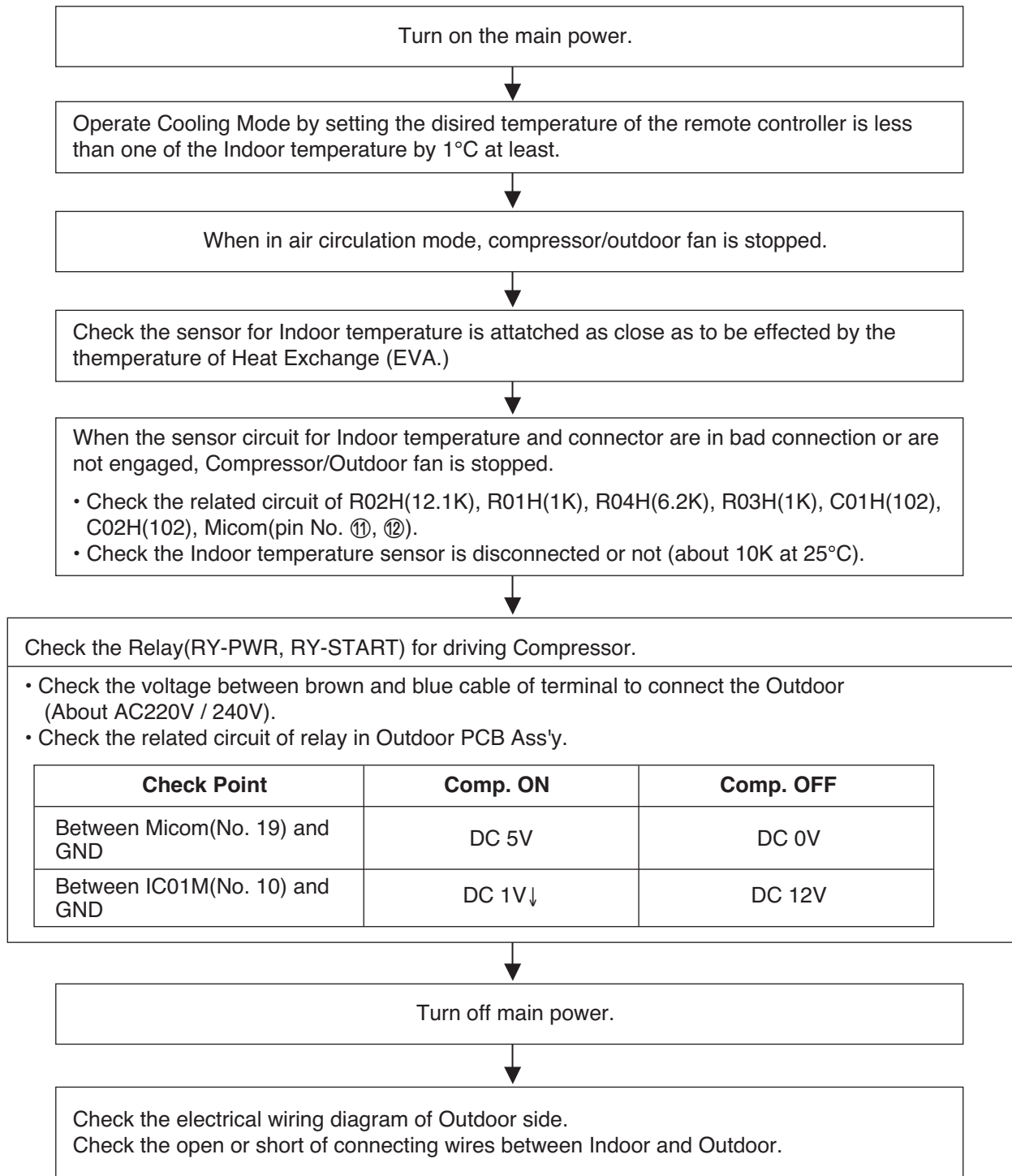
The operation check of the Indoor P.C.B. Ass'y		
Procedure	Specification	Remedy
1) The input voltage of power module.	1) AC230V \pm 30V : Check the rated voltage	1) Check the power outlet.
2) The output voltage of power module.	2) 12V \pm 3V	2) Replace P.C.B Ass'y

6.2 The Product doesn't operate with the remote controller



	Be sure to disconnect the power cable plug from the plug socket before disassembling the equipment for a repair. Internal components and circuit boards are at main potential when the equipment is connected to the power cables. This voltage is extremely dangerous and may cause death or severe injury if come in contact with it.
	Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.

6.3 The Compressor/Outdoor Fan are don't operate

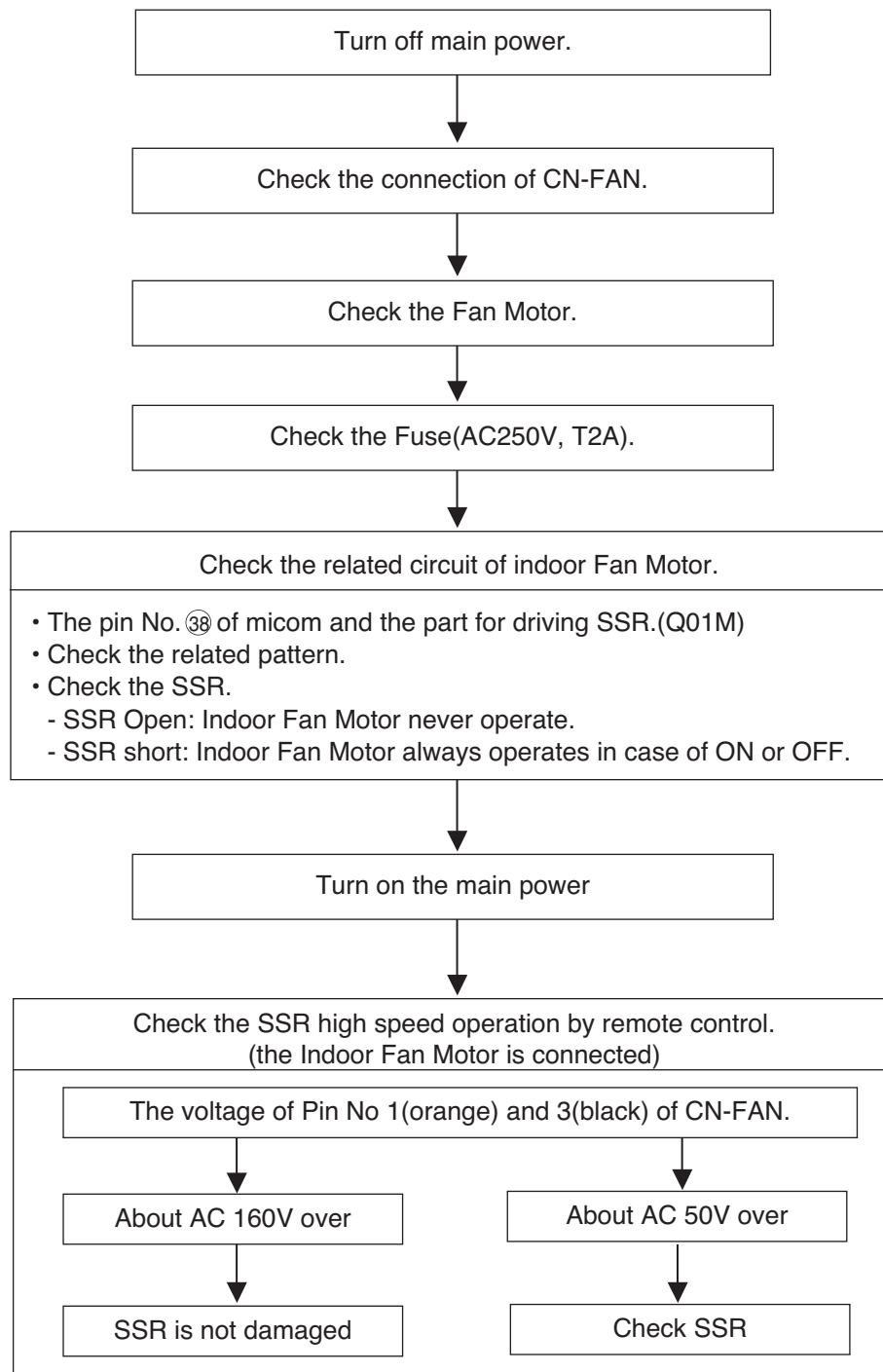


Be sure to disconnect the power cable plug from the plug socket before disassembling the equipment for a repair. Internal components and circuit boards are at main potential when the equipment is connected to the power cables. This voltage is extremely dangerous and may cause death or severe injury if come in contact with it.



Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.

6.4 When indoor Fan does not operate.

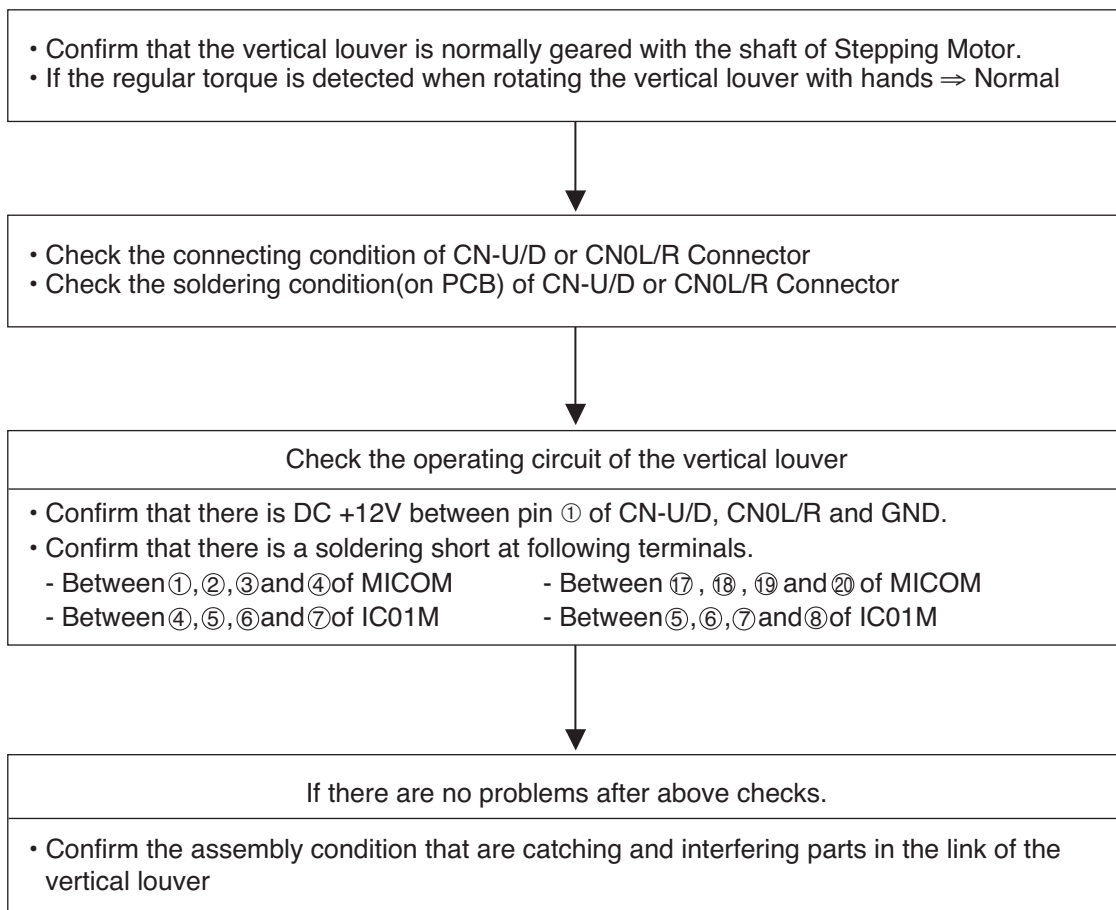




Be sure to disconnect the power cable plug from the plug socket before disassembling the equipment for a repair. Internal components and circuit boards are at main potential when the equipment is connected to the power cables. This voltage is extremely dangerous and may cause death or severe injury if come in contact with it.



Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.

6.5 When the louver does not operate.

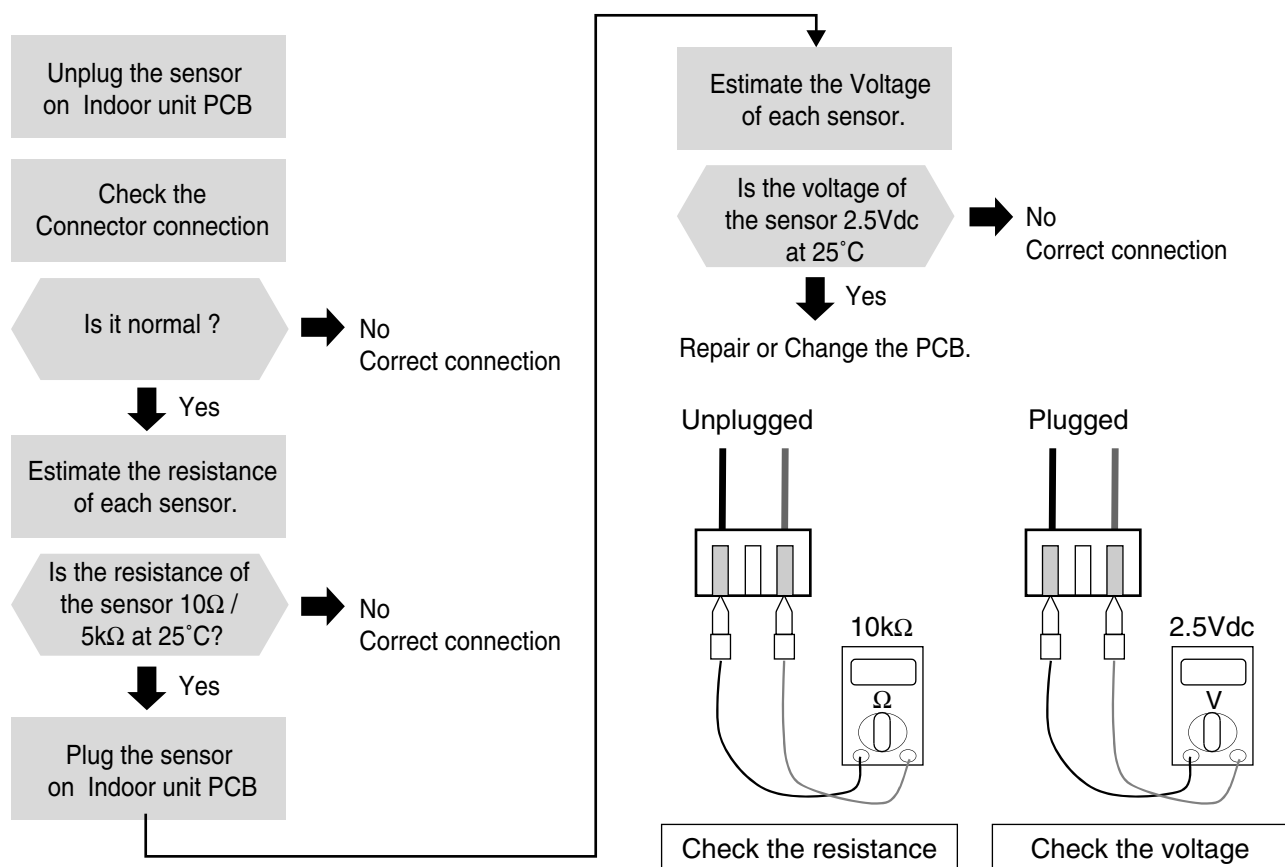


	Be sure to disconnect the power cable plug from the plug socket before disassembling the equipment for a repair. Internal components and circuit boards are at main potential when the equipment is connected to the power cables. This voltage is extremely dangerous and may cause death or severe injury if come in contact with it.
	Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.

6.6 Check code Trouble shooting CH01, CH02, CH06

Display code	Title	Cause of error	Check point & Normal condition
01	Indoor air sensor	<ul style="list-style-type: none"> Connector connection error Faulty PCB Faulty sensor (Open / Short) 	Normal resistor : 10K Ω / at 25°C (Unplugged) Normal voltage : 2.5Vdc / at 25°C(Plugged) Refer to sensor resistance table.
02	Indoor inlet pipe sensor	<ul style="list-style-type: none"> Connector connection error Faulty PCB Faulty sensor (Open / Short) 	Normal resistor : 5K Ω / at 25°C(Unplugged) Normal voltage : 2.5Vdc / at 25°C(Plugged) Refer to sensor resistance table.
06	Indoor outlet pipe sensor	<ul style="list-style-type: none"> Connector connection error Faulty PCB Faulty sensor (Open / Short) 	Normal resistor : 5K Ω / at 25°C(Unplugged) Normal voltage : 2.5Vdc / at 25°C(Plugged) Refer to sensor resistance table.

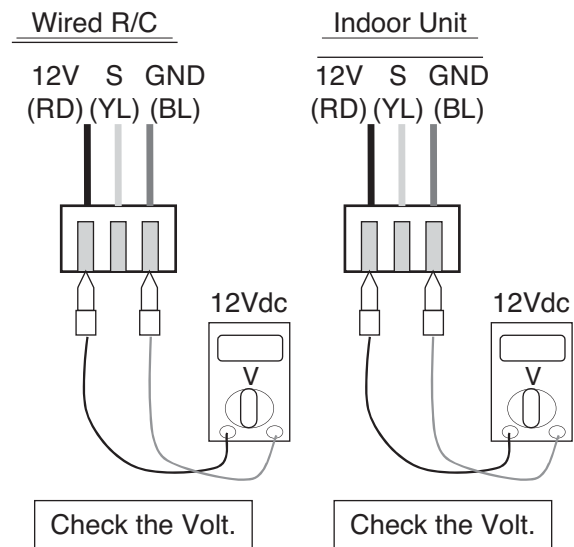
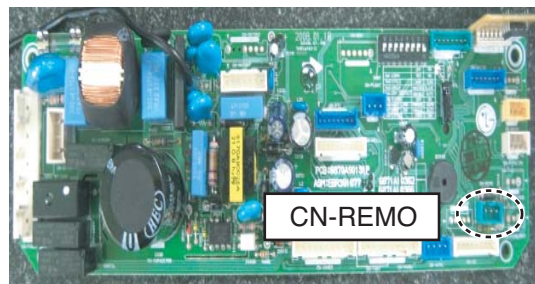
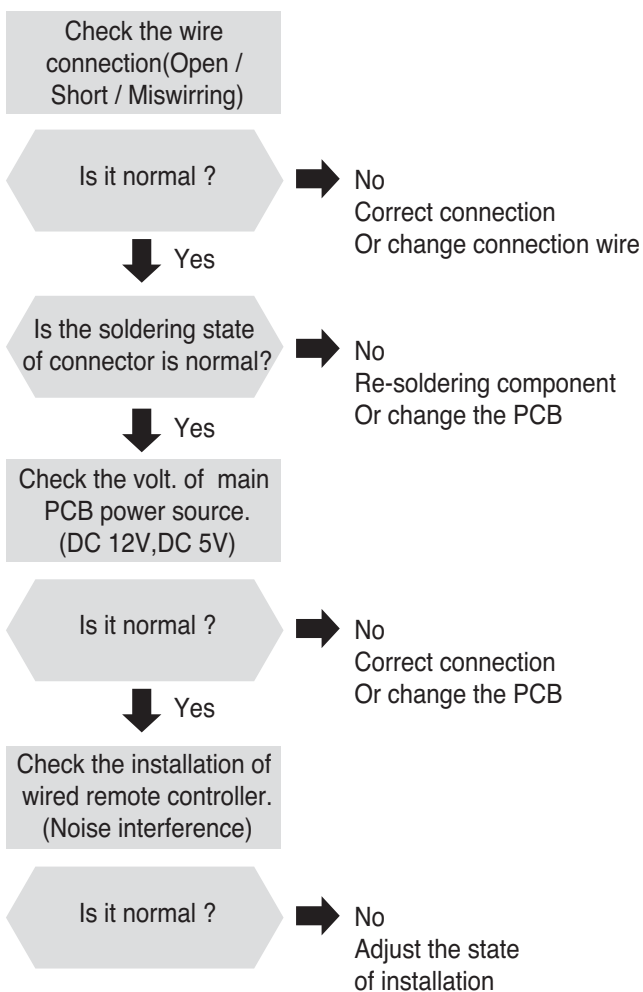
Check Flow Chart



6.7 Check code Trouble shooting CH03

Display code	Title	Cause of error	Check point & Normal condition
03	Communication Error (Wired remote controller)	<ul style="list-style-type: none"> Connector connection error Faulty PCB / Remote controller Connection wire break 	<ul style="list-style-type: none"> Connection of wire Main PCB Volt. DC12V Noise interference

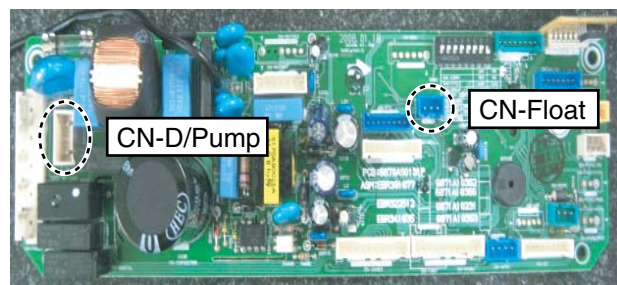
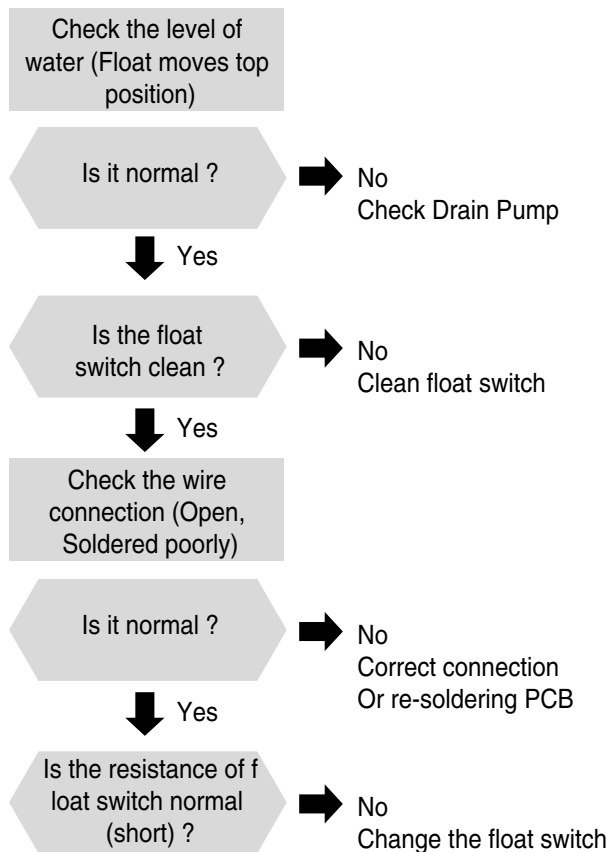
Check Flow Chart



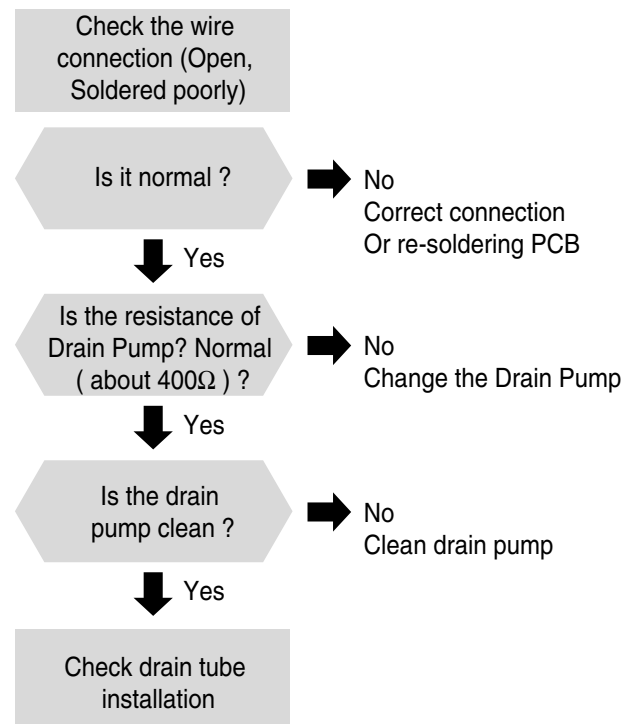
6.8 Check code Trouble shooting CH04

Display code	Title	Cause of error	Check point & Normal condition
04	Drain pump / Float switch	<ul style="list-style-type: none"> • Float switch open. (Normal : short) • Water over flow 	<ul style="list-style-type: none"> • The connection of wire (Drain pump/ Float switch) • Drain pump power input. (220V) • Drain tube installation. • Indoor unit installation. (Inclination)

Check Flow Chart



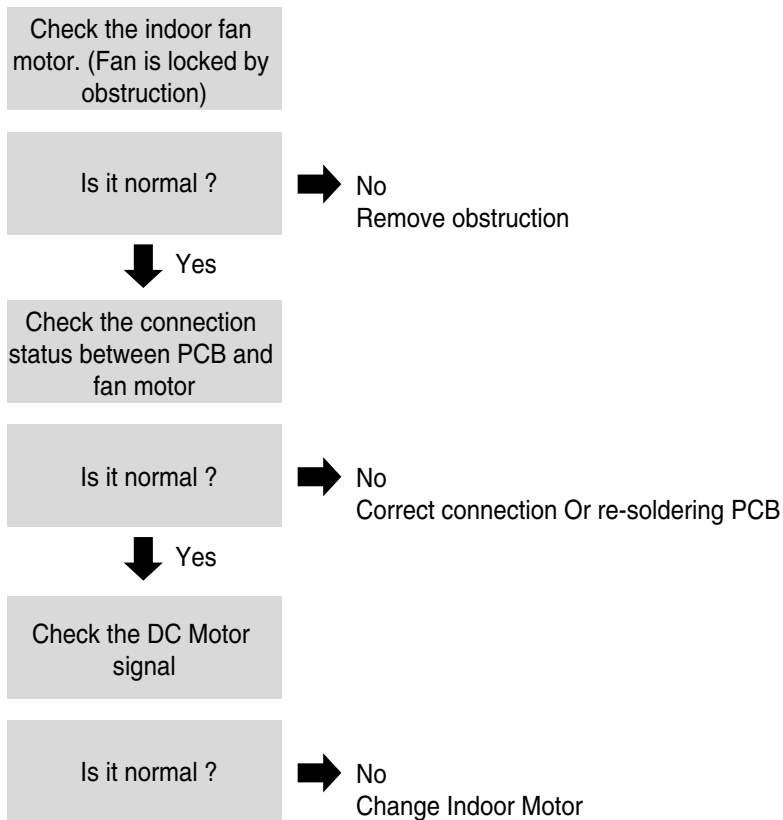
* Drain pump check



6.9 Check code Trouble shooting CH09, CH10

Display code	Title	Cause of error	Check point & Normal condition
09	EEPROM Check sum (Indoor)	<ul style="list-style-type: none"> • Check sum error 	<ul style="list-style-type: none"> • Check the poor soldering. • Change PCB
10	BLDC motor fan lock (Indoor)	<ul style="list-style-type: none"> • Fan motor break down • Fan motor & PCB poor contact • Obstruction to the fan 	<ul style="list-style-type: none"> • Check the indoor fan motor. • Check the connection status between PCB and fan motor.

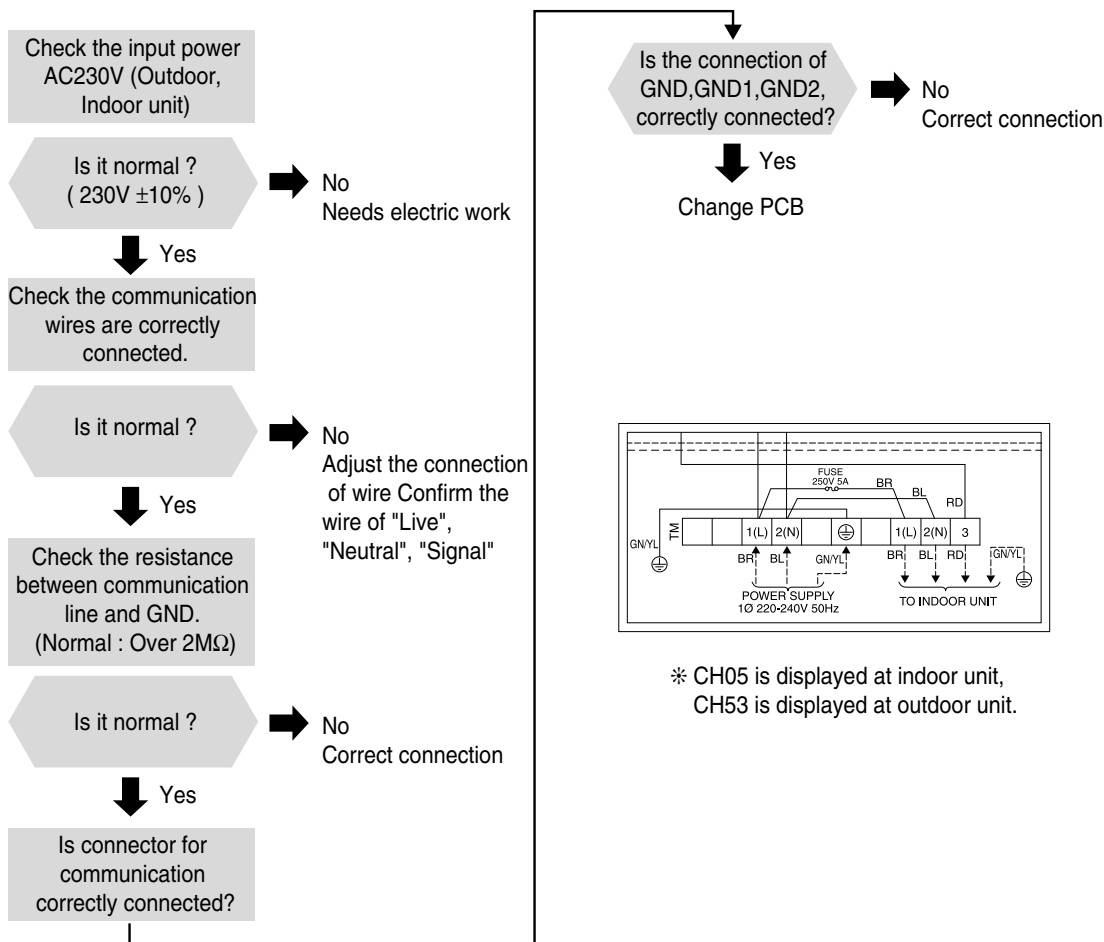
Check Flow Chart



6.10 Check code Trouble shooting CH05, CH53

Display code	Title	Cause of error	Check point & Normal condition
05 / 53	Communication (Indoor↔Outdoor)	<ul style="list-style-type: none"> • The connector for transmission is disconnected. • The connecting wires are misconnected. • The communication line is break • Outdoor PCB is abnormal. • Indoor PCB is abnormal. • Synchro # of IDU is abnormal. 	<ul style="list-style-type: none"> • Check power input AC 230V. (Outdoor, Indoor) • Check connector for transmission • Check wires are misconnecting. • Check transmission circuit of outdoor PCB • Check transmission circuit of indoor PCB • Check # of IDU setting DIP SW

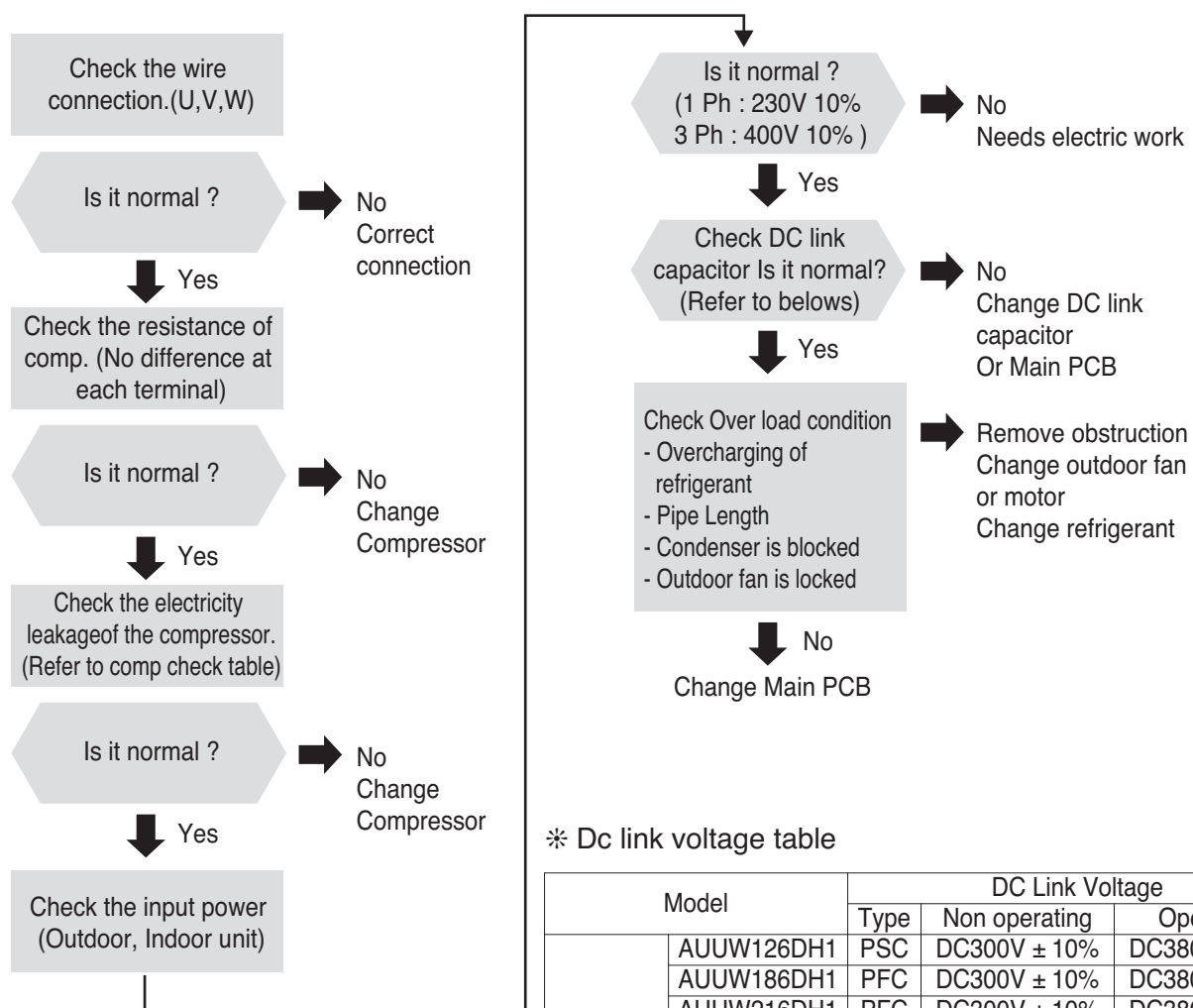
Check Flow Chart



6.11 Check code Trouble shooting CH21

Display code	Title	Cause of error	Check point & Normal condition
21	DC Peak	<ul style="list-style-type: none"> Instant over current Over Rated current Poor insulation of IPM 	<ul style="list-style-type: none"> An instant over current in the U,V,W phase <ul style="list-style-type: none"> Comp lock The abnormal connection of U,V,W Over load condition <ul style="list-style-type: none"> Overcharging of refrigerant Pipe length. Poor insulation of compressor

Check Flow Chart



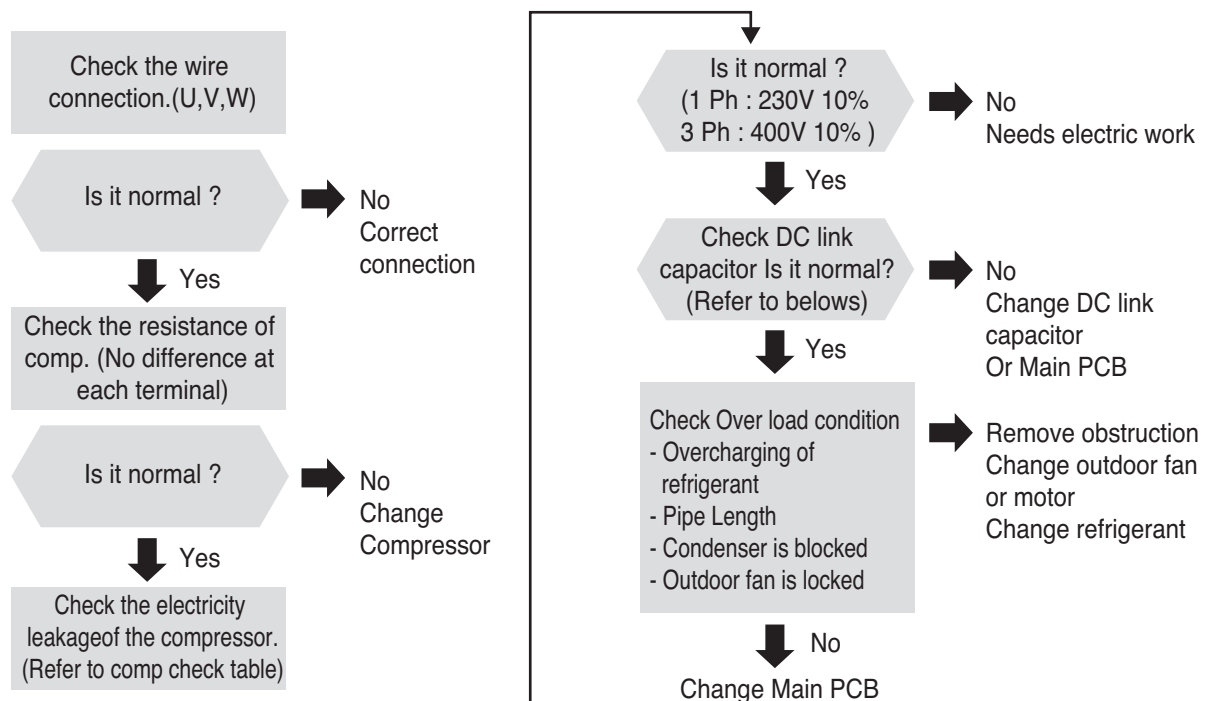
* Dc link voltage table

Model		DC Link Voltage		
		Type	Non operating	Operating
1 Phase	AUUW126DH1	PSC	DC300V ± 10%	DC380V ± 10%
	AUUW186DH1	PFC	DC300V ± 10%	DC380V ± 10%
	AUUW216DH1	PFC	DC300V ± 10%	DC380V ± 10%
	AUUW246DH1	PFC	DC300V ± 10%	DC380V ± 10%
	AUUW366DH1	PFC	DC300V ± 10%	DC380V ± 10%
	AUUW426DH1	PFC	DC300V ± 10%	DC380V ± 10%
	AUUW486DH1	PFC	DC300V ± 10%	DC380V ± 10%
3 Phase	AUUW368DH1	PFC	DC540V ± 10%	DC680V ± 10%
	AUUW428DH1	PFC	DC540V ± 10%	DC680V ± 10%
	AUUW488DH1	PFC	DC540V ± 10%	DC680V ± 10%

6.12 Check code Trouble shooting CH22

Display code	Title	Cause of error	Check point & Normal condition
22	Max. C/T	• Over current	<ul style="list-style-type: none"> • Malfunction of compressor • Blocking of pipe • Low voltage input • Refrigerant, pipe length, blocked, ...

Check Flow Chart



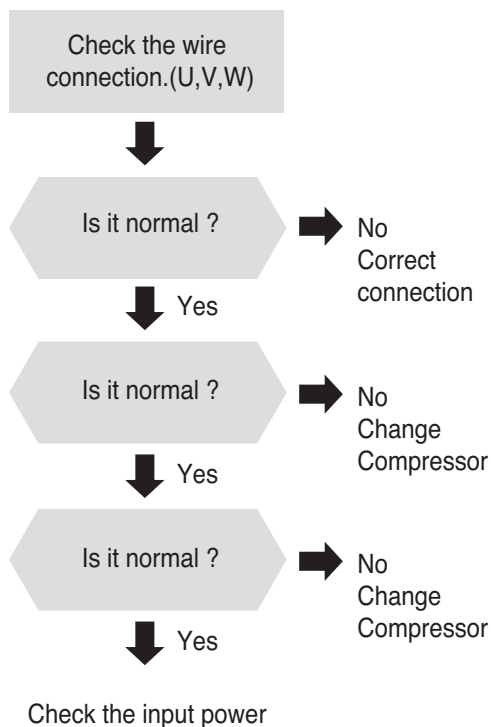
* Dc link voltage table

Model		DC Link Voltage		
		Type	Non operating	Operating
1 Phase	AUUW126DH1	PSC	DC300V ± 10%	DC380V ± 10%
	AUUW186DH1	PFC	DC300V ± 10%	DC380V ± 10%
	AUUW216DH1	PFC	DC300V ± 10%	DC380V ± 10%
	AUUW246DH1	PFC	DC300V ± 10%	DC380V ± 10%
	AUUW366DH1	PFC	DC300V ± 10%	DC380V ± 10%
	AUUW426DH1	PFC	DC300V ± 10%	DC380V ± 10%
	AUUW486DH1	PFC	DC300V ± 10%	DC380V ± 10%
3 Phase	AUUW368DH1	PFC	DC540V ± 10%	DC680V ± 10%
	AUUW428DH1	PFC	DC540V ± 10%	DC680V ± 10%
	AUUW488DH1	PFC	DC540V ± 10%	DC680V ± 10%

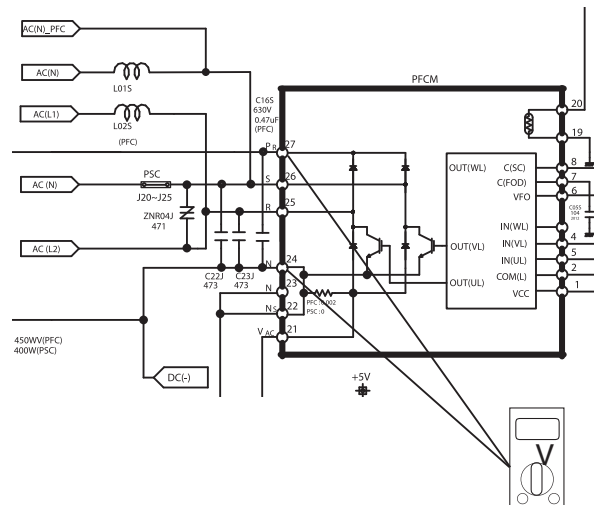
6.13 Check code Trouble shooting CH23, CH28

Display code	Title	Cause of error	Check point & Normal condition
23	DC Link Low voltage.	<ul style="list-style-type: none"> 1ph : DC link volt. is 140Vdc ↓ 3ph : DC link volt. is 250Vdc ↓ 	<ul style="list-style-type: none"> Check the power source. Check the components.
28	DC Link High voltage	<ul style="list-style-type: none"> 1ph : DC link volt. is 140Vdc ↑ 3ph : DC link volt. is 250Vdc ↑ 	<ul style="list-style-type: none"> Check the power source. Check the components.

Check Flow Chart



※ Check DC link voltage



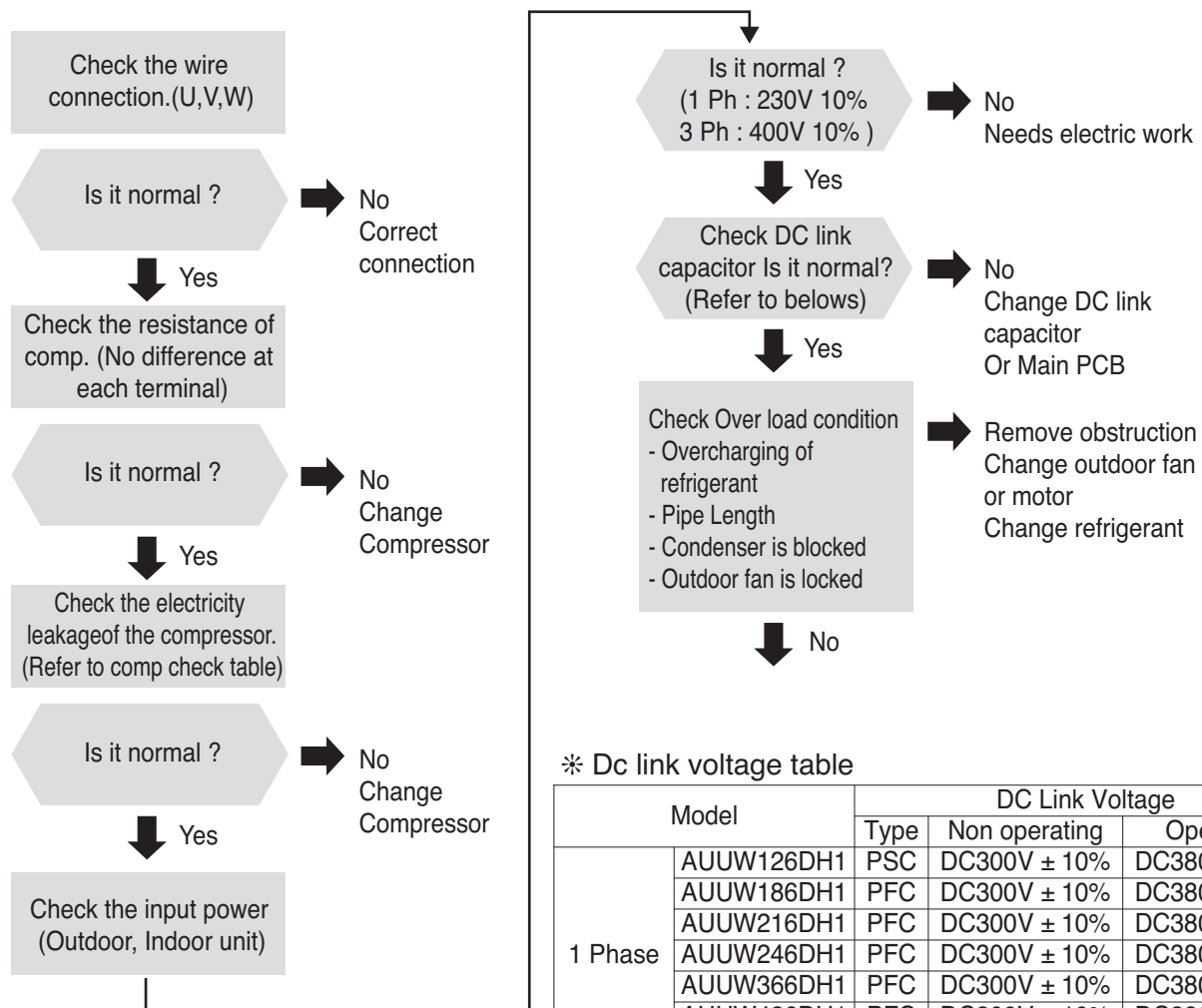
※ Dc link voltage table

Model		DC Link Voltage		
		Type	Non operating	Operating
1 Phase	AUUW126DH1	PSC	DC300V ± 10%	DC380V ± 10%
	AUUW186DH1	PFC	DC300V ± 10%	DC380V ± 10%
	AUUW216DH1	PFC	DC300V ± 10%	DC380V ± 10%
	AUUW246DH1	PFC	DC300V ± 10%	DC380V ± 10%
	AUUW366DH1	PFC	DC300V ± 10%	DC380V ± 10%
	AUUW426DH1	PFC	DC300V ± 10%	DC380V ± 10%
	AUUW486DH1	PFC	DC300V ± 10%	DC380V ± 10%
3 Phase	AUUW368DH1	PFC	DC540V ± 10%	DC680V ± 10%
	AUUW428DH1	PFC	DC540V ± 10%	DC680V ± 10%
	AUUW488DH1	PFC	DC540V ± 10%	DC680V ± 10%

6.14 Check code Trouble shooting CH26, CH27

Display code	Title	Cause of error	Check point & Normal condition
26	DC Compressor Position	• Compressor position detect error	• Check the connection of comp wire "U,V,W" • Malfunction of compressor • Check the component of "IPM", detection parts.
27	PSC Fault PFC Fault	• Over current at "IGBT"/PFC module	• Check the component of "IGBT" /PFC module. • Check the components.

Check Flow Chart



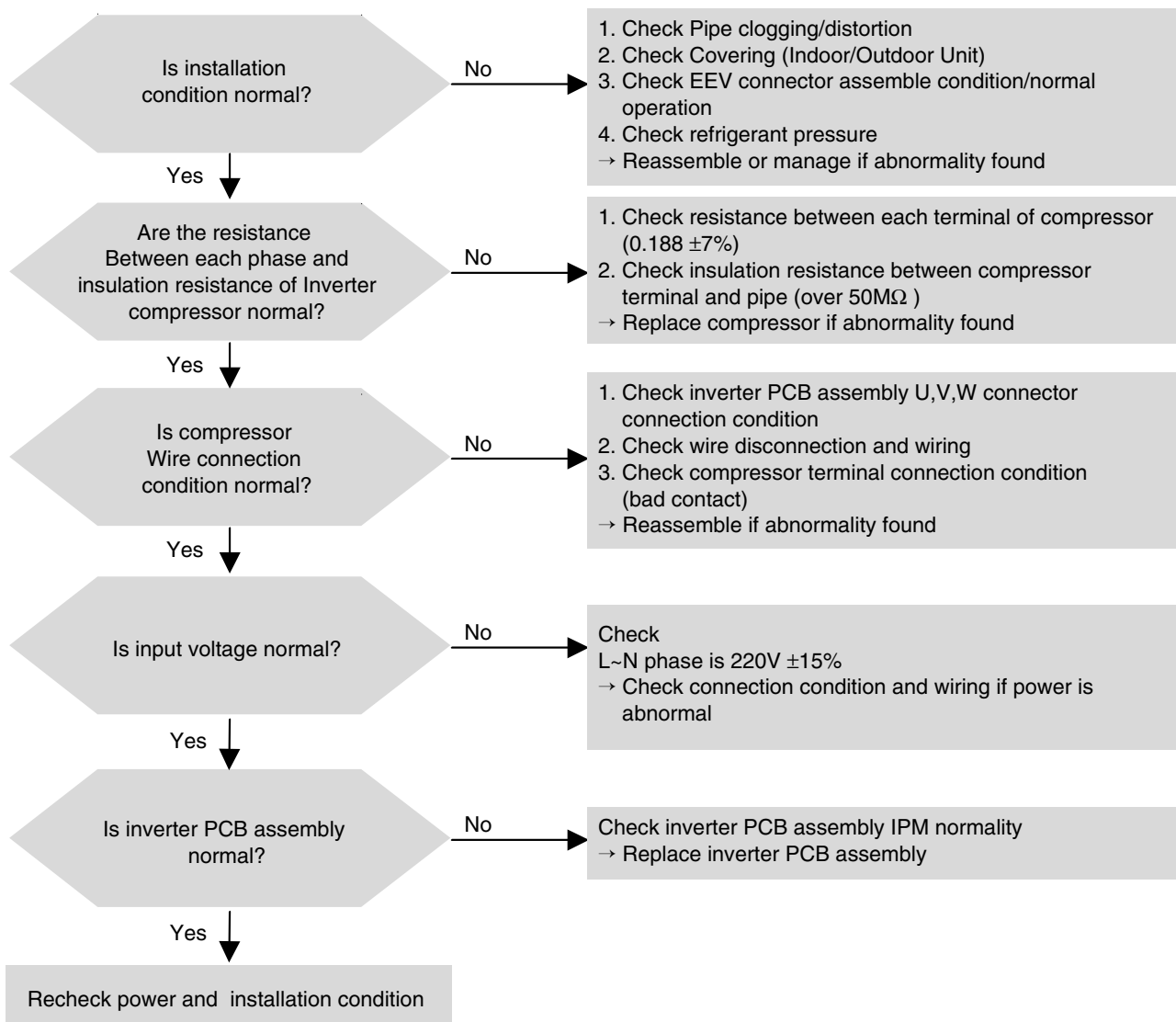
* Dc link voltage table

Model		DC Link Voltage		
		Type	Non operating	Operating
1 Phase	AUUW126DH1	PSC	DC300V ± 10%	DC380V ± 10%
	AUUW186DH1	PFC	DC300V ± 10%	DC380V ± 10%
	AUUW216DH1	PFC	DC300V ± 10%	DC380V ± 10%
	AUUW246DH1	PFC	DC300V ± 10%	DC380V ± 10%
	AUUW366DH1	PFC	DC300V ± 10%	DC380V ± 10%
	AUUW426DH1	PFC	DC300V ± 10%	DC380V ± 10%
	AUUW486DH1	PFC	DC300V ± 10%	DC380V ± 10%
3 Phase	AUUW368DH1	PFC	DC540V ± 10%	DC680V ± 10%
	AUUW428DH1	PFC	DC540V ± 10%	DC680V ± 10%
	AUUW488DH1	PFC	DC540V ± 10%	DC680V ± 10%

6.15 Check code Trouble shooting CH29

Display code	Title	Cause of error	Check point & Normal condition
29	Inverter compressor over current	Inverter compressor input current is over 23A	<ol style="list-style-type: none"> 1. Overload operation (Pipe clogging/Covering/EEV defect/Ref. over-charge) 2. Compressor damage(Insulation damage/Motor damage) 3. Input voltage low 4. ODU inverter PCB assembly damage

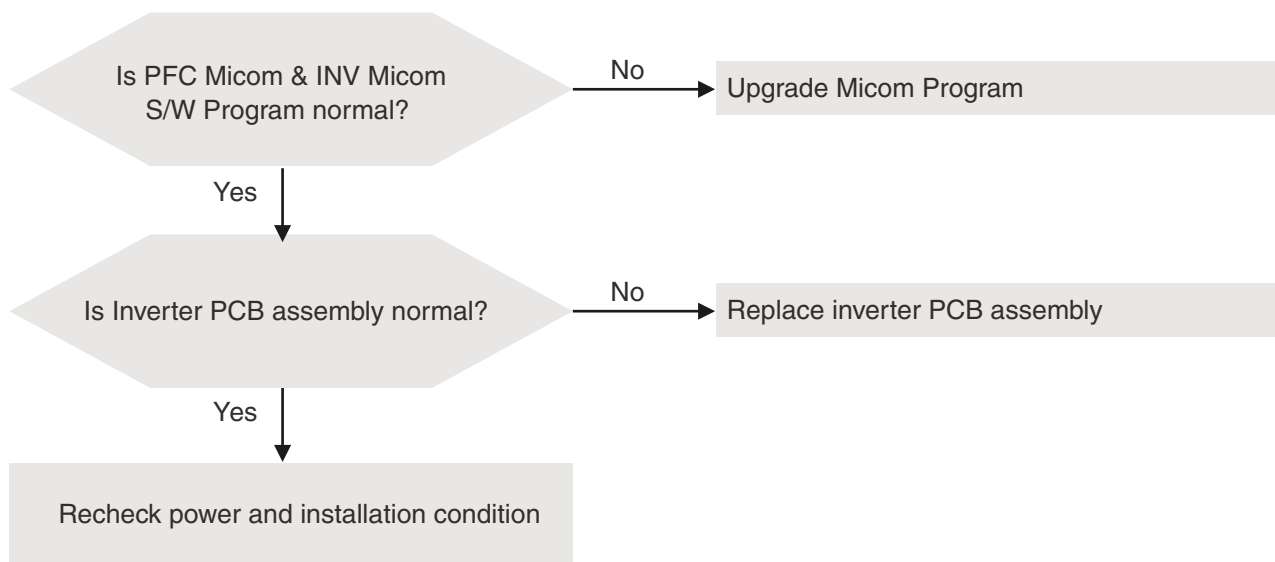
Check Flow Chart



6.16 Check code Trouble shooting CH39

Display code	Title	Cause of error	Check point & Normal condition
39	Transmission Error Between (PFC Micom → INV Micom)	Communication Error Between PFC Micom and INV Micom.	1. Micom defect/Circuit defect 2. Different Micom S/W Version 3. ODU inverter PCB assembly damage

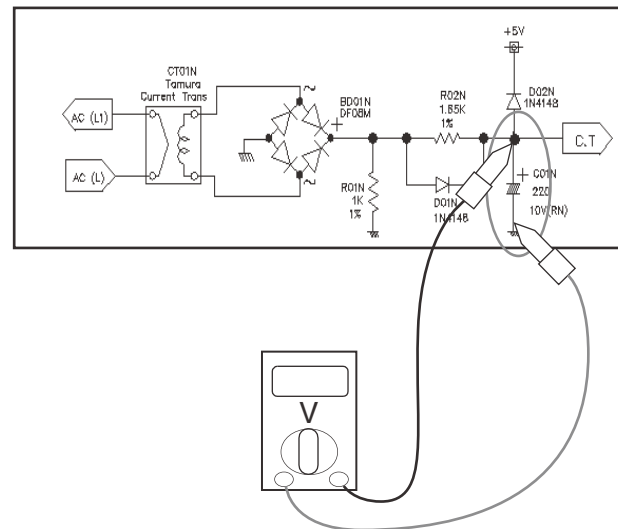
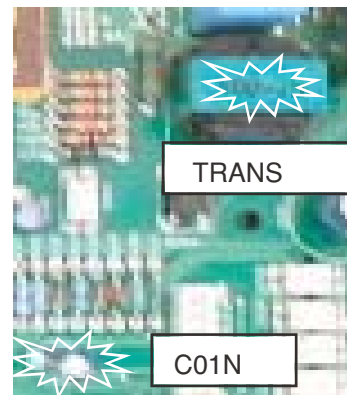
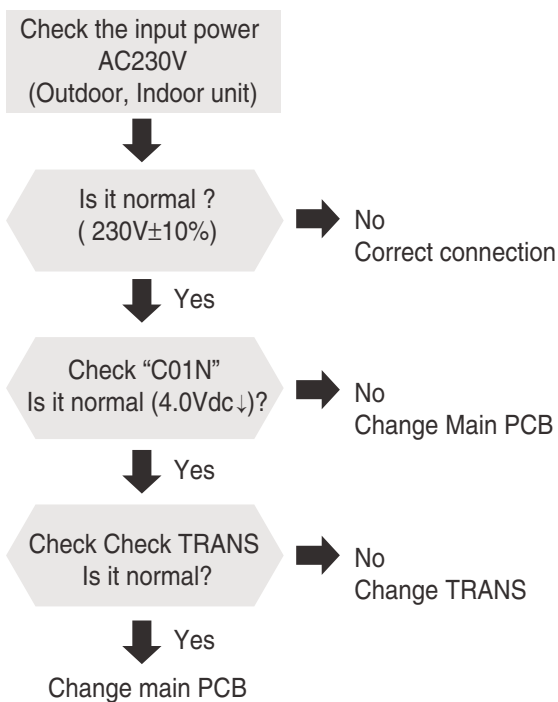
Check Flow Chart



6.17 Check code Trouble shooting CH40

Display code	Title	Cause of error	Check point & Normal condition
40	C/T Internal circuit	<ul style="list-style-type: none"> Initial current error 	<ul style="list-style-type: none"> Malfunction of current detection circuit. (Open / Short) The voltage of "C01N" Is 4.0Vdc (25A) ↑.

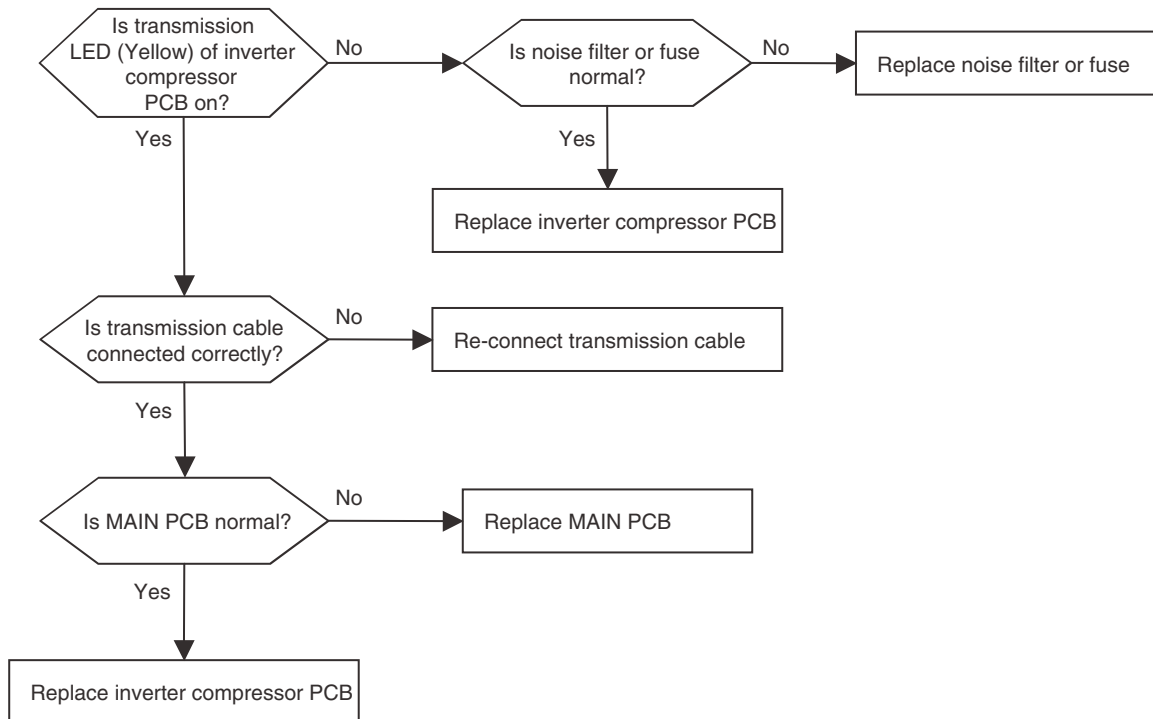
Check Flow Chart



6.18 Check code Trouble shooting CH52

Display code	Title	Cause of error	Check point & Normal condition
52	Transmission error between (Inverter PCB → Main PCB)	Main controller of Master unit of Master unit can't receive signal from inverter controller	1. Power cable or transmission cable is not connected 2. Defect of outdoor Main fuse/Noise Filter 3. Defect of outdoor Main / inverter PCB

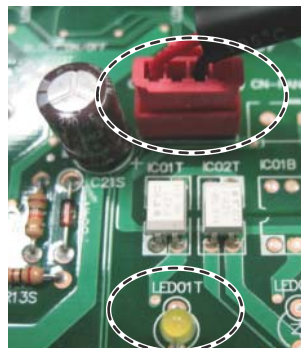
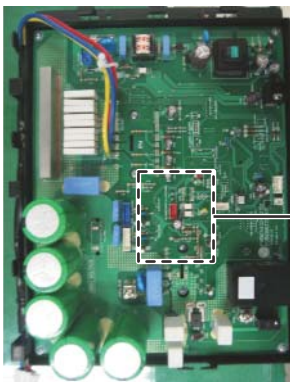
■ Error diagnosis and countermeasure flow chart



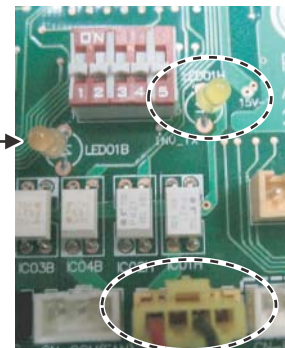
Check Point

- Check the Transmission connector and LED (Main & Inverter)

▶ 42/48/60k



<Inverter PCB>

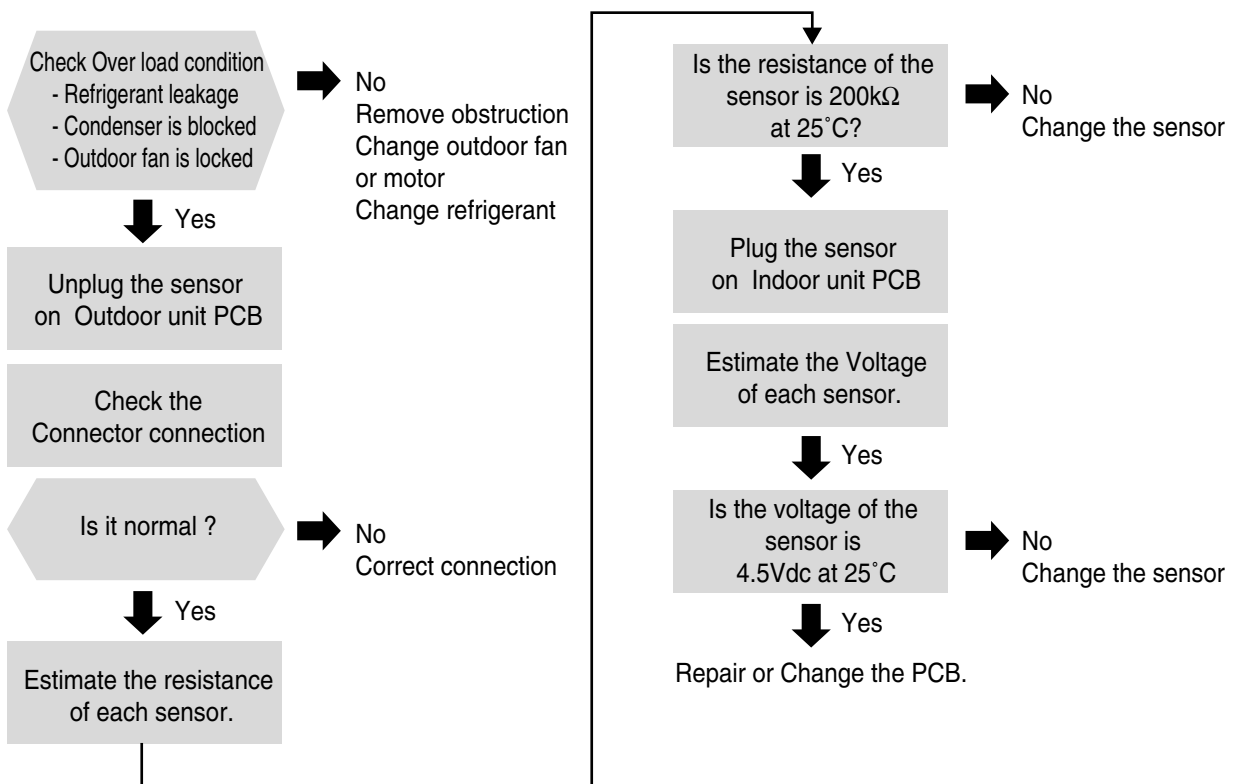


<MAIN PCB>

6.19 Check code Trouble shooting CH32, CH33

Display code	Title	Cause of error	Check point & Normal condition
32	D-pipe (Inverter) temp. high (105°C [†])	<ul style="list-style-type: none"> Discharge sensor (Inverter) temp. high 	<ul style="list-style-type: none"> Check the discharge pipe sensor for INV. Check the install condition for over load. Check the leakage of refrigerant. Check the SVC V/V open. Refer to sensor resistance table.

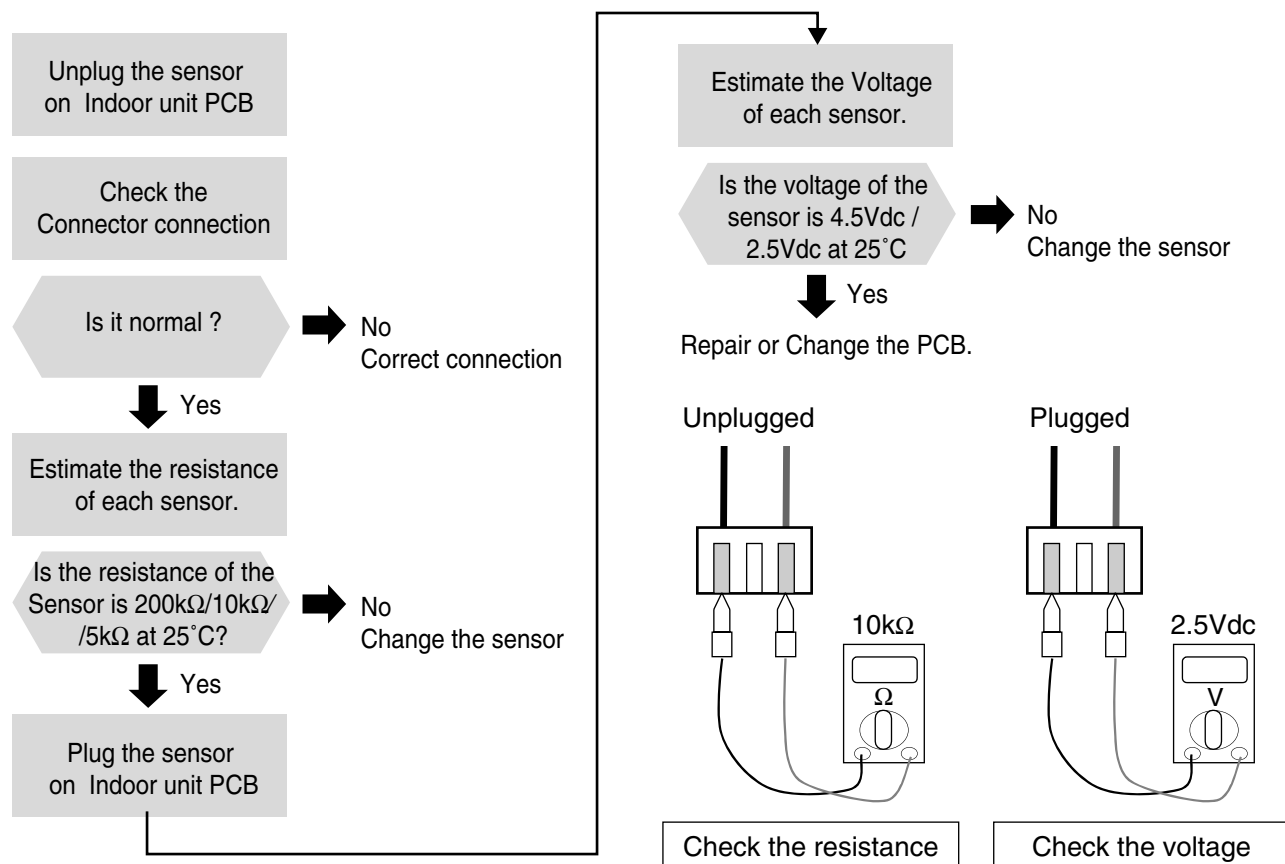
Check Flow Chart



6.20 Check code Trouble shooting CH41, CH44, CH45, CH46, CH47, CH65

Display code	Title	Cause of error	Check point & Normal condition
41 47	D-pipe sensor(Inv) D-pipe sensor(Cons)	<ul style="list-style-type: none"> Connector connection error Faulty PCB Faulty sensor (Open / Short) 	<ul style="list-style-type: none"> Normal resistor : 200KΩ/ at 25°C (Unplugged) Normal voltage : 4.5Vdc / at 25°C (plugged) Refer to sensor resistance table.
44	Air sensor	<ul style="list-style-type: none"> Connector connection error Faulty PCB Faulty sensor (Open / Short) 	<ul style="list-style-type: none"> Normal resistor : 10KΩ/ at 25°C (Unplugged) Normal voltage : 2.5Vdc / at 25°C (plugged) Refer to sensor resistance table.
45 46 48	Condenser Middle Pipe Sensor Suction Pipe sensor Condenser Out Pipe Sensor	<ul style="list-style-type: none"> Connector connection error Faulty PCB Faulty sensor (Open / Short) 	<ul style="list-style-type: none"> Normal resistor : 5KΩ/ at 25°C (Unplugged) Normal voltage : 2.5Vdc / at 25°C (plugged) Refer to sensor resistance table.
65	Heat sink sensor	<ul style="list-style-type: none"> Connector connection error Faulty PCB Faulty sensor (Open / Short) 	<ul style="list-style-type: none"> Normal resistor : 5KΩ/ at 25°C (Unplugged) Normal voltage : 2.5Vdc / at 25°C (plugged) Refer to sensor resistance table.

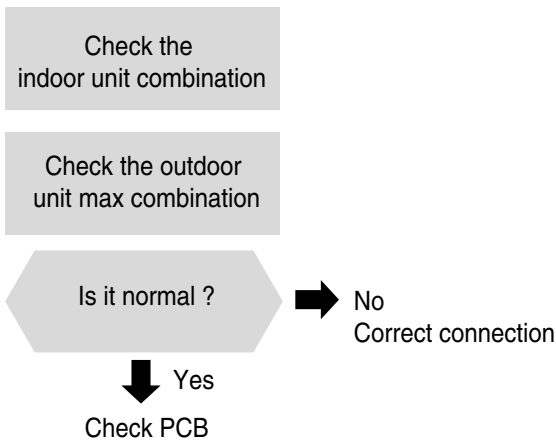
Check Flow Chart



6.21 Check code Trouble shooting CH51, CH60

Display code	Title	Cause of error	Check point & Normal condition
51	Over capacity	<ul style="list-style-type: none"> Over capacity Combination 	<ul style="list-style-type: none"> Check the indoor unit capacity. Check the combination table.
60	EEPROM Check sum	<ul style="list-style-type: none"> Check sum error 	<ul style="list-style-type: none"> Check the connection port. Check the poor soldering.

Check Flow Chart (CH51)



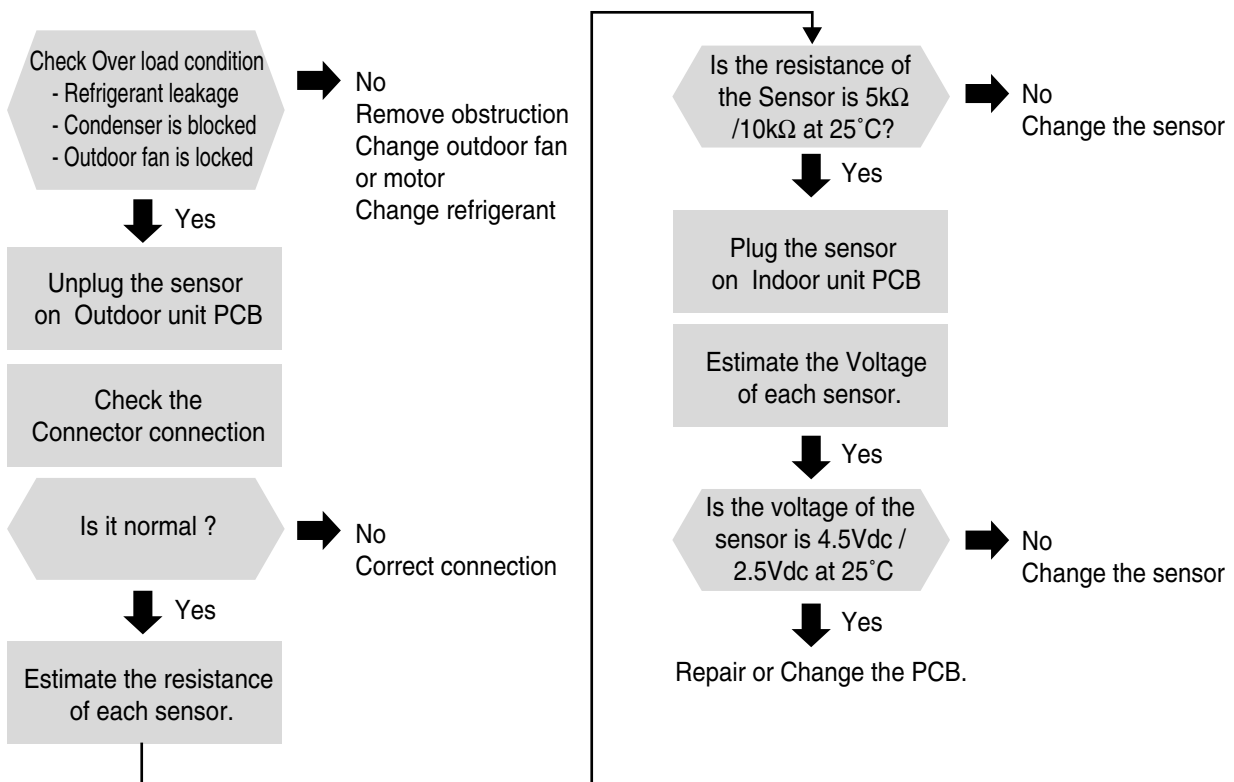
Check Flow Chart (CH60)

Error code	Contents	Case of error	Indoor Status
01	Air sensor (open/short)	Open / Short	Off
02	Inlet pipe sensor	Open / Short	Off
03	Communication(Indoor ↔ Wired R/Control)	Communication Poorly	Off
04	Drain pump/ Float switch	Float switch Open	Off
05	Communication(Indoor ↔ Outdoor)	Communication Poorly	Off
06	Outlet pipe sensor	Open / Short	Off
07	Different operation mode	Different operation mode	Off

6.22 Check code Trouble shooting CH61, CH62

Display code	Title	Cause of error	Check point & Normal condition
61	Condenser pipe sensor temp. high	• condenser pipe sensor detected high temp.(65°C)	<ul style="list-style-type: none"> • Check the load condition. • Check the sensor of Condenser pipe sensor. • Normal resistor : 5KΩ/ at 25°C (Unplugged) • Normal voltage : 2.5Vdc / at 25°C (Plugged)
62	Heat sink sensor temp. high	• heat sink sensor detected high temp. (85°C)	<ul style="list-style-type: none"> • Check the load condition. • Check the sensor of heat sink. • Normal resistor : 10KΩ/ at 25°C (Unplugged) • Normal voltage : 2.5Vdc / at 25°C (Plugged)

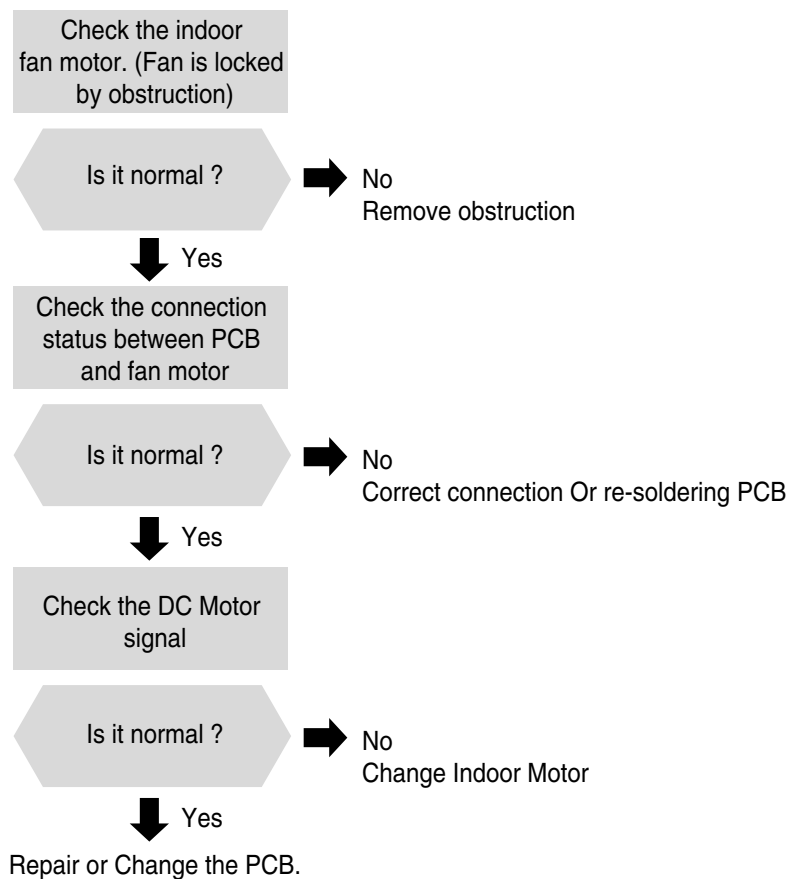
Check Flow Chart



6.23 Check code Trouble shooting CH67

Display code	Title	Cause of error	Check point & Normal condition
67	BLDC motor fan lock (Outdoor)	<ul style="list-style-type: none"> Fan motor break down Fan motor & PCB poor contact Obstruction to the fan 	<ul style="list-style-type: none"> Check the indoor fan motor. Check the connection status between PCB and fan motor.

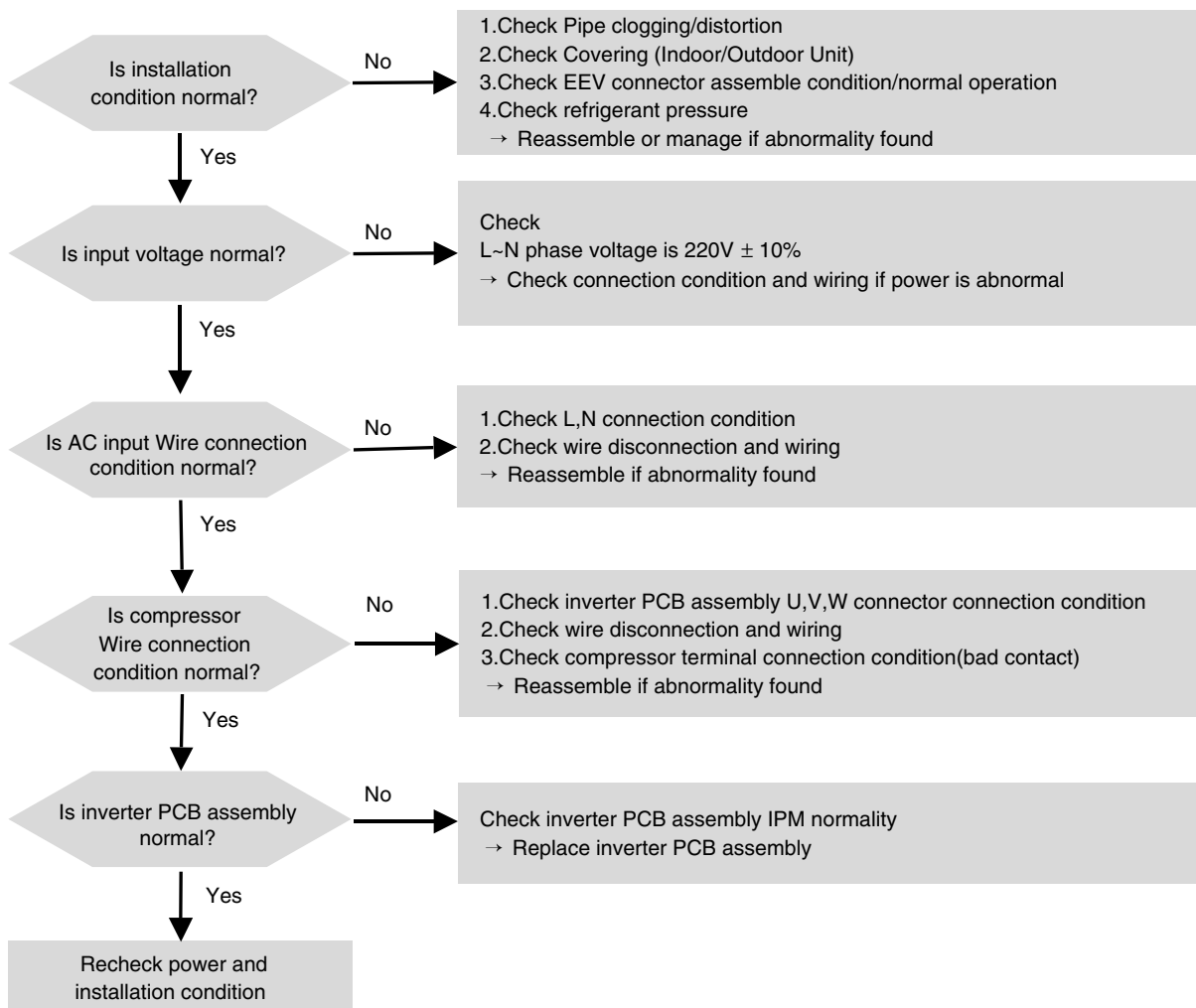
Check Flow Chart



6.24 Check code Trouble shooting CH73

Display code	Title	Cause of error	Check point & Normal condition
73	AC input instant over current error (Matter of software)	Inverter PCB input power current is over 48A(peak) for 2ms	<ol style="list-style-type: none"> 1. Overload operation (Pipe clogging/Covering/EEV defect/Ref.overcharge) 2. Compressor damage (Insulation damage/Motor damage) 3. Input voltage abnormal (L, N) 4. Power line assemble condition abnormal 5. Inverter PCB assembly damage (input current sensing part)

Check Flow Chart



Sensor resistance table

Pipe Temp

B Constant	3977	
Std Temp	25	
Resistance	5	
Temp	Resistance	Volt
-30	102.17	4.714
-25	73.49	4.611
-20	53.55	4.481
-15	39.5	4.322
-10	29.48	4.131
-5	22.24	3.91
0	16.95	3.661
5	13.05	3.389
10	10.14	3.102
15	7.94	2.808
20	6.28	2.515
25	5	2.232
30	4.01	1.965
35	3.24	1.717
40	2.64	1.493
45	2.16	1.293
50	1.78	1.116
55	1.48	0.962
60	1.23	0.828
65	1.03	0.714
70	0.87	0.615
75	0.74	0.531
80	0.63	0.459
85	0.54	0.397
90	0.46	0.345
95	0.4	0.3
100	0.34	0.262

Air Temp

B Constant	3977	
Std Temp	25	
Resistance	10	
Temp	Resistance	Volt
-30	204.35	4.72
-25	146.97	4.62
-20	107.09	4.492
-15	79	4.336
-10	58.95	4.149
-5	44.47	3.931
0	33.9	3.685
5	26.09	3.416
10	20.27	3.131
15	15.89	2.838
20	12.55	2.546
25	10	2.262
30	8.03	1.994
35	6.49	1.745
40	5.28	1.519
45	4.32	1.316
50	3.56	1.137
55	2.95	0.981
60	2.46	0.846
65	2.06	0.729
70	1.74	0.628
75	1.47	0.542
80	1.25	0.469
85	1.07	0.406
90	0.92	0.353
95	0.79	0.307
100	0.68	0.268

Heatsink Temp

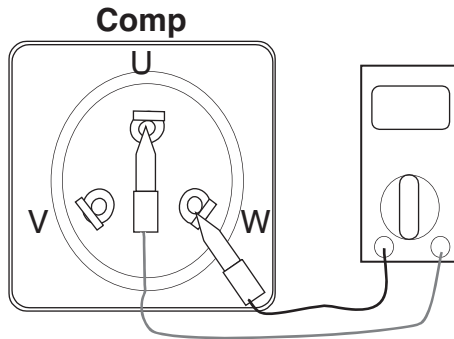
B Constant	3970	
Std Temp	25	
Resistance	10	
Temp	Resistance	Volt
-30	102.17	4.71
-25	73.49	4.61
-20	53.55	4.48
-15	39.5	4.32
-10	29.48	4.13
-5	22.24	3.91
0	16.95	3.66
5	26.05	4.73
10	20.25	4.66
15	15.87	4.57
20	12.55	4.47
25	10	4.35
30	8.03	4.21
35	6.49	4.06
40	5.28	3.89
45	4.33	3.71
50	3.57	3.52
55	2.96	3.32
60	2.47	3.11
65	2.07	2.9
70	1.74	2.69
75	1.48	2.48
80	1.26	2.28
85	1.07	2.09
90	0.92	1.9
95	0.8	1.73
100	0.69	1.57

D-Pipe Temp

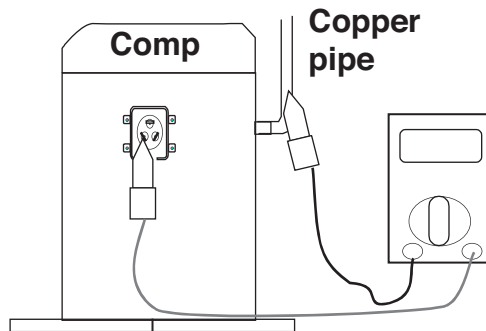
B Constant	3500	
Std Temp	25	
Resistance	200	
Temp	Resistance	Volt
-30	2845.99	4.969
0	585.66	4.851
5	465.17	4.814
10	372.49	4.77
15	300.58	4.717
20	244.33	4.657
25	200	4.587
30	164.79	4.508
35	136.64	4.418
40	113.98	4.318
45	95.62	4.208
50	80.65	4.088
55	68.38	3.958
60	58.27	3.82
65	49.88	3.674
70	42.9	3.522
75	37.05	3.365
80	32.14	3.205
85	27.99	3.043
90	24.46	2.88
95	21.46	2.719
100	18.89	2.561
110	14.79	2.255
120	11.72	1.972
130	9.4	1.716
140	7.62	1.487
150	6.24	1.287

Check of compressor

■ Check resistance of the compressor



■ Check Insulation resistance of the compressor



Model		Resistance(Ω at 25°C)		
		U-V	V-W	W-U
1 Phase	AUUW126DH1	0.706	0.701	0.69
	AUUW186DH1	0.997	0.965	0.98
	AUUW216DH1	0.997	0.965	0.98
	AUUW246DH1	0.997	0.965	0.98
	AUUW366DH1	0.52	0.513	0.516
	AUUW426DH1	0.52	0.513	0.516
	AUUW486DH1	0.52	0.513	0.516
3 Phase	AUUW368DH1	1.183	1.174	1.181
	AUUW428DH1	1.183	1.174	1.181
	AUUW488DH1	1.183	1.174	1.181

Resistance(Ω) at 20C	
Terminal	All models
U-GND	More than 2M
V-GND	More than 2M
W-GND	More than 2M



P/NO : MFL62034004

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